

ASTOUNDING

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STORIES

OCTOBER
1935

20¢

AM NOT GOD

by
Nat Schachner

ALSO:

Weinbaum

Stuart

Gallun

Haggard

Williamson

Largest Circulation Science Fiction Magazine

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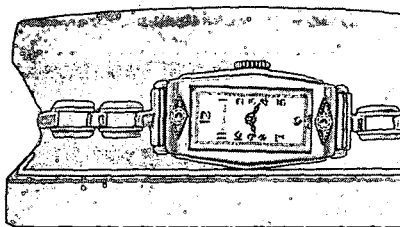


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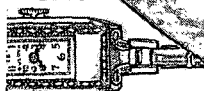
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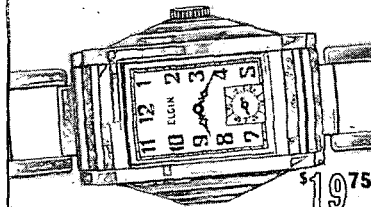
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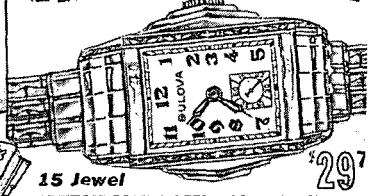


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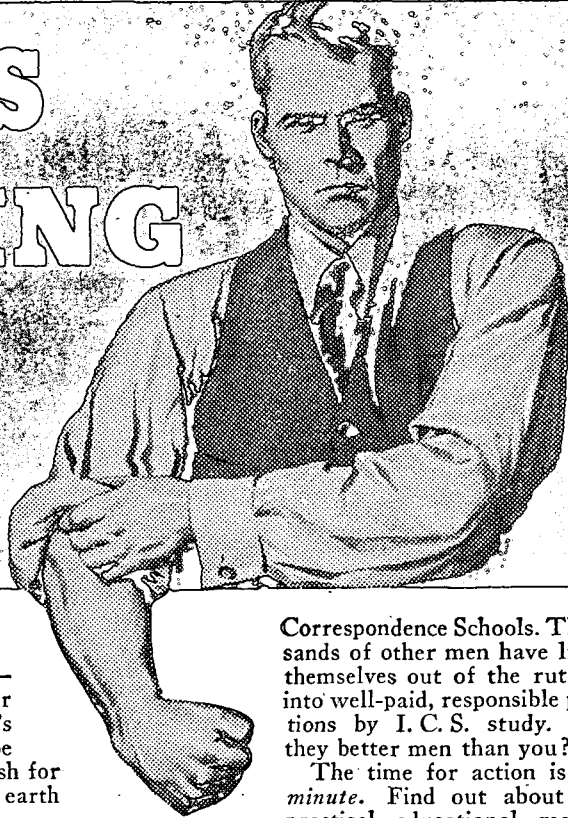
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On Sale Third Wednesday of Each Month

VOLUME XVI
NUMBER 2

ASTOUNDING STORIES

OCTOBER
1935

A STREET & SMITH PUBLICATION

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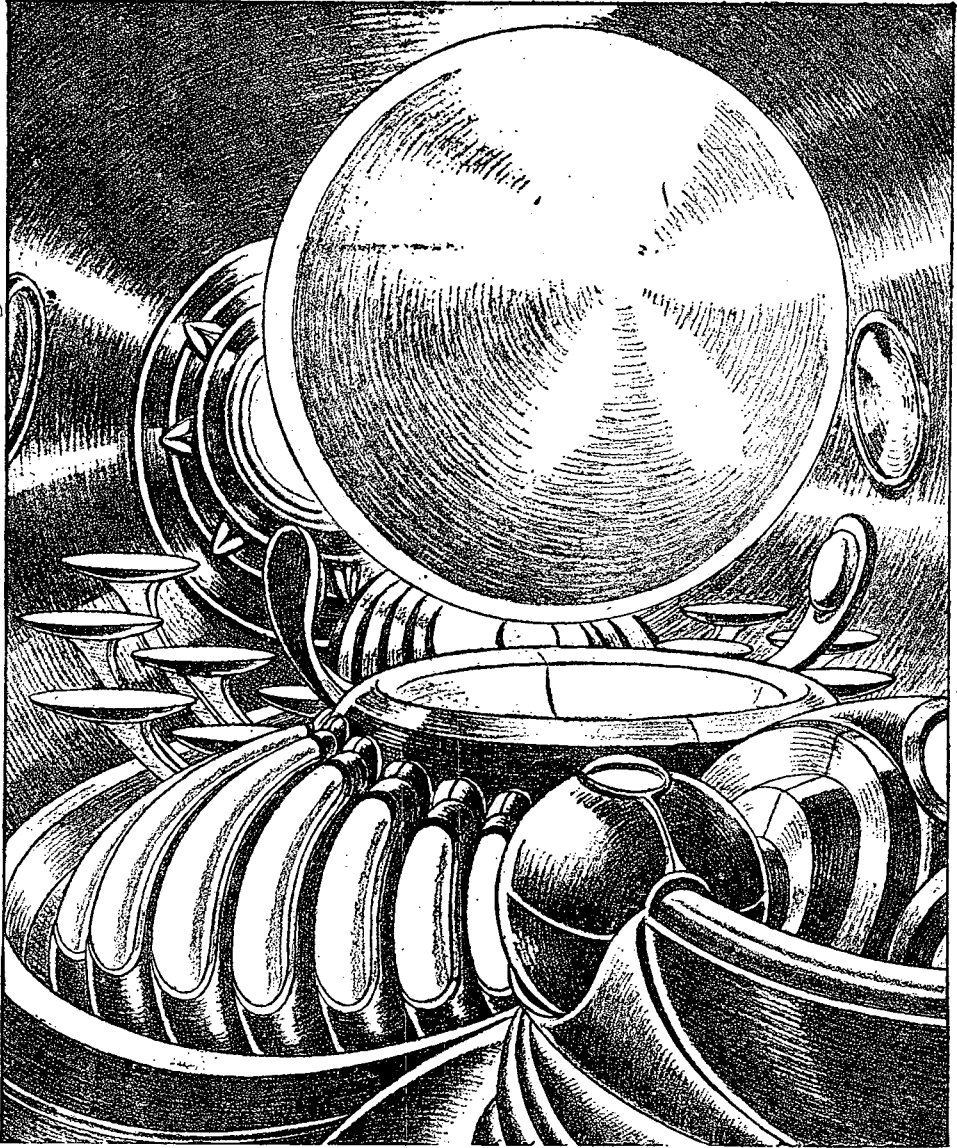
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NIGHT

by Don A.
Stuart

CONDON was staring through the glasses with a face tense and drawn, all his attention utterly concentrated on that one almost invisible speck infinitely far up in the blue sky, and saying over and over again in the most horribly absent-minded way, "My Lord—my Lord——"

Suddenly he shivered and looked down at me, sheer agony in his face. "He's never coming down. Don, he's never coming down——"

I knew it, too—knew it as solidly as I knew the knowledge was impossible. But I smiled and said: "Oh, I wouldn't say that. If anything, I'd fear his com-



*The machines were far beyond anything ever
conceived—machines of perfection.*

ing down. What goes up comes down.”

Major Condon trembled all over. His mouth worked horribly for a moment before he could speak. “Talbot—I’m scared—I’m horribly scared. You know—you’re his assistant—you know he’s trying to defeat gravity. Men aren’t meant to—it’s wrong—wrong—”

His eyes were glued on those binocu-

lars again, with the same terrible tensi-
ty, and now he was saying over and over in
that absent-minded way, “wrong—
wrong—wrong—”

Simultaneously he stiffened, and
stopped. The dozen or so other men
standing on that lonely little emergency
field stiffened; then the major crumpled
to the ground. I’ve never before seen

a man faint, let alone an army officer with a D. S. medal. I didn't stop to help him, because I knew something had happened. I grabbed the glasses.

Far, far up in the sky was that little orange speck—far, where there is almost no air, and he had been forced to wear a stratosphere suit with a little alcohol heater. The broad, orange wings were overlaid now with a faint-glowing, pearl-gray light. And it was falling. Slowly, at first, circling aimlessly downward. Then it dipped, rose, and somehow went into a tail spin.

It was horrible. I know I must have breathed, but it didn't seem so. It took minutes for it to fall those miles, despite the speed. Eventually it whipped out of that tail spin—through sheer speed, whipped out and into a power dive. It was a ghastly, flying coffin, hurtling at more than half a thousand miles an hour when it reached the Earth, some fifteen miles away.

The ground trembled, and the air shook with the crash of it. We were in the cars and roaring across the ground long before it hit. I was in Bob's car, with Jeff, his laboratory technician—Bob's little roadster he'd never need again. The engine picked up quickly, and we were going seventy before we left the field, jumped a shallow ditch and hit the road—the deserted, concrete road that led off toward where he must be. The engine roared as Jeff clamped down on the accelerator. Dimly, I heard the major's big car coming along behind us.

Jeff drove like a maniac, but I didn't notice. I knew the thing had done ninety-five but I think we must have done more. The wind whipped tears in my eyes so I couldn't be sure whether I saw mounting smoke and flame or not. With Diesel fuel there shouldn't be—but that plane had been doing things it shouldn't. It had been trying out Carter's antigravity coil.

We shot up the flat, straight road across wide, level country, the wind

moaning a requiem about the car. Far ahead I saw the side road that must lead off toward where Bob should be, and lurched to the braking of the car, the whine and sing of violently shrieking tires, then to the skidding corner. It was a sand road; we slithered down it and for all the lightness and power, we slowed to sixty-five, clinging to the seat as the soft sand gripped and clung.

Violently Jeff twisted into a branching cow path, and somehow the springs took it. We braked to a stop a quarter of a mile from the plane.

IT WAS in a fenced field of pasture and wood lot. We leaped the fence, and raced toward it; Jeff got there first, just as the major's car shrieked to a stop behind ours.

The major was cold and pale when he reached us. "Dead," he stated.

And I was very much colder and probably several times as pale. "I don't know!" I moaned. "He isn't there!"

"Not there!" The major almost screamed it. "He must be—he has to be. He had no parachute—wouldn't take one. They say he didn't jump—"

I pointed to the plane, and wiped a little cold sweat from my forehead. I felt clammy all over, and my spine prickled. The solid steel of the huge Diesel engine was driven through the stump of a tree, down into the ground perhaps eight or nine feet, and the dirt and rock had splashed under that blow like wet mud.

The wings were on the other side of the field, flattened, twisted straws of dural alloy. The fuselage of the ship was a perfect silhouette—a longitudinal projection that had flattened in on itself, each separate section stopping only as it hit the ground.

The great torus coil with its strangely twined wrappings of hair-fine bismuth wire was intact! And bent over it, twisted, utterly wrecked by the impact, was the main-wing stringer—the great

dural-alloy beam that supported most of the ship's weight in the air. It was battered, crushed on those hair-fine, fragile bismuth wires—and not one of them was twisted or displaced or so much as skinned. The back frame of the ponderous Diesel engine—the heavy supercharger was the anvil of that combination—was cracked and splintered. And not one wire of the hellish bismuth coil was strained or skinned or displaced.

And the red pulp that should have been there—the red pulp that had been a man—wasn't. It simply wasn't there at all. He hadn't left the plane. In the clear, cloudless air, we could see that. He was gone.

We examined it, of course. A farmer came, and another, and looked, and talked. Then several farmers came in old, dilapidated cars with their wives and families, and watched.

We set the owner of the property on watch and went away—went back to the city for workmen and a truck with a derrick. Dusk was falling. It would be morning before we could do anything, so we went away.

Five of us—the major of the army air force, Jeff Rodney, the two Douglass Co. men whose names I never remembered and I—sat in my—our—room. Bob's and Jeff's and mine. We'd been sitting there for hours trying to talk, trying to think, trying to remember every little detail, and trying to forget every ghastly detail. We couldn't remember the detail that explained it, nor forget the details that rode and harried us.

And the telephone rang. I started. Then slowly got up and answered. A strange voice, flat and rather unpleasant, said: "Mr. Talbot?"

"Yes."

It was Sam Gantry, the farmer we'd left on watch: "There's a man here."

"Yes? What does he want?"

"I dunno. I dunno where he came from. He's either dead or out cold. Gotta funny kind of an aviator suit on, with a glass face on it. He looks all blue, so I guess he's dead."

"Lord! Bob! Did you take that helmet off?" I roared.

"No, sir, no—no, sir.. We just left him the way he was."

"His tanks have run out. Listen. Take a hammer, a wrench, anything, and break that glass faceplate! Quick! We'll be there."

Jeff was moving. The major was, too, and the others. I made a grab for the half-empty bottle of Scotch, started out, and ducked back into the closet. With the oxygen bottle under my arm I jumped into the crowded little roadster just as Jeff started it moving. He turned on the horn, and left it that way.

We dodged, twisted, jumped and stopped with jerks in traffic, then leaped into smooth, roaring speed out toward the farmer's field. The turns were familiar now; we scarcely slowed for them, sluing around them. This time Jeff charged through the wire fence. A headlight popped; there was a shrill scream of wire, the wicked *zing* of wire scratching across the hood and mud guards, and we were bouncing across the field.

THERE WERE two lanterns on the ground; three men carried others; more men squatted down beside a still figure garbed in a fantastic, bulging, airproof stratosphere suit. They looked at us, open-mouthed as we skidded to a halt, moving aside as the major leaped out and dashed over with the Scotch. I followed close behind with the oxygen bottle.

Bob's faceplate was shattered, his face blue, his lips blue and flecked with froth. A long gash across his cheek from the shattered glass bled slowly. The major lifted his head without a word, and

glass tinkled inside the helmet as he tried to force a little whisky down his throat.

"Wait!" I called. "Major, give him artificial respiration, and this will bring him around quicker—better." The major nodded, and rose, rubbing his arm with a peculiar expression.

"That's cold!" he said, as he flipped Bob over, and straddled his back. I held the oxygen bottle under Bob's nose as the major swung back in his arc, and let the raw, cold oxygen gas flow into his nostrils.

In ten seconds Bob coughed, gurgled, coughed violently, and took a deep shuddering breath. His face turned pink almost instantly under that lungful of oxygen, and I noticed with some surprise that he seemed to exhale almost nothing, his body absorbing the oxygen rapidly.

He coughed again; then: "I could breathe a heck of a sight better if you'd get off my back," he said. The major jumped up, and Bob turned over and sat up. He waved me aside, and spat. "I'm—all right," he said softly.

"Lord, man, what happened?" demanded the major.

Bob sat silent for a minute. His eyes had the strangest look—a hungry look—as he gazed about him. He looked at the trees beyond and at the silent, watching men in the light of the lanterns; then up, up to where a myriad stars gleamed and danced and flickered in the clear night sky.

"I'm back," he said softly. Then suddenly he shivered, and looked horribly afraid. "But—I'll have to be—then—too."

He looked at the major for a minute, and smiled faintly. And at the two Douglass Co. men. "Your plane was all right. I started up on the wings, as arranged, went way up, till I thought surely I was at a safe height, where the air wasn't too dense and the field surely wouldn't reach to Earth—Lord!—reach

to Earth! I didn't guess how far that field extended. It touched Earth—twice.

"I was at forty-five thousand when I decided it was safe, and cut the engine. It died, and the stillness shocked me. It was so quiet. So quiet.

"I turned on the coil circuit, and the dynamotor began to hum as the tubes warmed up. And then—the field hit me. It paralyzed me in an instant. I never had a chance to break the circuit, though I knew instantly something was wrong—terribly wrong. But the very first thing it did was to paralyze me, and I had to sit there and watch the instruments climb to positions and meanings they were never meant for.

"I realized I alone was being affected by that coil—I alone, sitting directly over it. I stared at the meters and they began to fade, began to seem transparent, unreal. And as they faded into blankness I saw clear sky beyond them; then for a hundredth of a second, like some effect of persistence of vision, I thought I saw the plane falling, twisting down at incredible speed, and the light faded as the Sun seemed to rocket suddenly across the sky and vanish.

"I don't know how long I was in that paralyzed condition, where there was only blankness—neither dark nor light, nor time nor any form—but I breathed many times. Finally, form crawled and writhed into the blankness, and seemed to solidify beneath me as, abruptly, the blankness gave way to a dull red light. I was falling.

"I thought instantly of the forty-five thousand feet that lay between me and the solid Earth, and stiffened automatically in terror. And in the same instant I landed in a deep blanket of white snow, stained by the red light that lighted the world.

"COLD. Cold—it tore into me like the fang of a savage animal. What

cold! The cold of ultimate death. It ripped through that thick, insulated suit and slashed at me viciously, as though there were no insulation there. I shivered so violently I could scarcely turn up the alcohol valves. You know I carried alcohol tanks and catalyst grids for heating, because the only electric fields I wanted were those of the apparatus. Even used a Diesel instead of gas engine.

"I thank the Lord for that then. I realized that whatever had happened I was in a spot indescribably cold and desolate. And in the same instant, realized that the sky was black. Blacker than the blackest night, and yet before me the snow field stretched to infinity, tainted by the blood-red light, and my shadow crawled in darker red at my feet.

"I turned around. As far as the eye could see in three directions the land swept off in very low, very slightly rolling hills, almost plains—red plains of snow dyed with the dripping light of sunset. I thought.

"In the fourth direction, a wall—a wall that put the Great Wall of China to shame—loomed up half a mile—a blood-red wall that had the luster of metal. It stretched across the horizon, and looked a scant hundred yards away, for the air was utterly clear. I turned up my alcohol burners a bit more and felt a little better.

"Something jerked my head around like a giant hand—a sudden thought. I stared at the Sun and gulped. It was four times—six times—the size of the Sun I knew. And it wasn't setting. It was forty-five degrees from the horizon. It was red. Blood-red. And there wasn't the slightest bit of radiant heat reaching my face from it. That Sun was cold.

"I'd just automatically assumed I was still on Earth, whatever else might have happened, but now I knew I couldn't be. It must be another planet of another sun

—a frozen planet—for that snow was frozen air. I knew it absolutely. A frozen planet of a dead sun.

"And then I changed even that. I looked up at the black sky above me, and in all the vast black bowl of the heavens, not three-score stars were visible. Dim, red stars, with one single sun that stood out for its brilliance—a yellowish-red sun perhaps a tenth as bright as our Sun, but a monster here. It was another—a dead—space. For if that snow was frozen air, the only atmosphere must have been neon and helium. There wasn't any hazy air to stop the light of the stars, and that dim, red sun didn't obscure them with its light. The stars were gone.

"In that glimpse, my mind began working by itself; I was scared.

"Scared?" I was so scared I was afraid I was going to be sick. Because right then I knew I was never coming back. When I felt that cold, I'd wondered when my oxygen bottles would give out, if I'd get back before they did. Now it was not a worry. It was simply the limiting factor on an already-determined thing, the setting on the time bomb. I had just so much more time before I died right there.

"My mind was working out things, working them out all by itself, and giving answers I didn't want, didn't want to know about. For some reason it persisted in considering this was Earth, and the conviction became more and more fixed. It was right. That was Earth. And it was old Sol. Old—old Sol. It was the time axis that coil distorted—not gravity at all. My mind worked that out with a logic as cold as that planet.

"If it was time it had distorted, and this was Earth, then it had distorted time beyond imagining to an extent as meaningless to our minds as the distance a hundred million light years is. It was simply vast—incalculable. The Sun was dead. The Earth was dead. And

Earth was already, in our time, two billions of years old, and in all that geological time, the Sun had not changed measurably. Then how long was it since my time? The Sun was dead. The very stars were dead. It must have been, I thought even then, billions on billions of years. And I grossly underestimated it.

"The world was old—old—old. The very rocks and ground radiated a crushing aura of incredible age. It was old, older than—but what is there? Older than the hills? Hills? Gosh, they'd been born and died and been born and worn away again, a million, a score of million times! Old as the stars? No, that wouldn't do. The stars were dead—then.

"I looked again at the metal wall, and set out for it, and the aura of age washed up at me, and dragged at me, and tried to stop this motion when all motion should have ceased. And the thin, unutterably cold wind whined in dead protest at me, and pulled at me with the ghost hands of the million million million that had been born and lived and died in the countless ages before I was born.

"I wondered as I went. I didn't think clearly; for the dead aura of the dead planet pulled at me. Age. The stars were dying, dead. They were huddled there in space, like decrepit old men, huddling for warmth. The galaxy was shrunk. So tiny, it wasn't a thousand light years across, the stars were separated by miles where there had been light years. The magnificent, proudly sprawling universe I had known, that flung itself across a million million light years, that flung radiant energy through space by the millions of millions of tons was—gone.

"It was dying—a dying miser that hoarded its last broken dregs of energy in a tiny cramped space. It was broken and shattered. A thousand billion years

before the cosmical constant had been dropped from that broken universe. The cosmical constant that flung giant galaxies whirling apart with ever greater speed had no place here. It had hurled the universe in broken fragments, till each spattered bit felt the chill of loneliness, and wrapped space about itself, to become a universe in itself while the flaming galaxies vanished.

"THAT had happened so long ago that the writing it had left in the fabric of space itself had worn away. Only the gravity constant remained, the hoarding constant, that drew things together, and slowly the galaxy collapsed, shrunken and old, a withered mummy.

"The very atoms were dead. The light was cold; even the red light made things look older, colder. There was no youth in the universe. I didn't belong, and the faint protesting rustle of the infinitely cold wind about me moved the snow in muted, futile protest, resenting my intrusion from a time when things were young. It whinnied at me feebly, and chilled the youth of me.

"I plodded on and on, and always the metal wall retreated, like one of those desert mirages. I was too stupefied by the age of the thing to wonder; I just walked on.

"I was getting nearer, though. The wall was real; it was fixed. As I drew slowly nearer, the polished sheen of the wall died and the last dregs of hope died. I'd thought there might be some one still living behind that wall. Beings who could build such a thing might be able to live even here. But I couldn't stop then; I just went on. The wall was broken and cracked. It wasn't a wall I'd seen; it was a series of broken walls, knitted by distance to a smooth front.

"There was no weather to age them, only the faintest stirring of faint, dead winds—winds of neon and helium, inert and uncorroding—as dead and inert as

the universe. The city had been dead a score of billions of years. That city was dead for a time ten times longer than the age of our planet to-day. But nothing destroyed it. Earth was dead—too dead to suffer the racking pains of life. The air was dead, too dead to scrape away metal.

"But the universe itself was dead. There was no cosmic radiation then to finally level the walls by atomic disintegration. There had been a wall—a single metal wall. Something—perhaps a last wandering meteor—had chanced on it in a time incalculably remote, and broken it. I entered through the great gap. Snow covered the city—soft, white snow. The great red sun stood still just where it was. Earth's restless rotation had long since been stilled—long, long since.

"There were dead gardens above, and I wandered up to them. That was really what convinced me it was a human city, on Earth. There were frozen, huddled heaps that might once have been men. Little fellows with fear forever frozen on their faces huddled helplessly over something that must once have been a heating device. Dead perhaps, since the last storm old Earth had known, tens of billions of years before.

"I went down. There were vastnesses in that city. It was huge. It stretched forever, it seemed, on and on, in its deadness. Machines, machines everywhere. And the machines were dead, too. I went down, down where I thought a bit of light and heat might linger. I didn't know then how long death had been there; those corpses looked so fresh, preserved by the eternal cold.

"It grew dark down below, and only through rents and breaks did that bloody light seep in. Down and down, till I was below the level of the dead surface. The white snow persisted, and then I came to the cause of that final, sudden

death. I could understand then. More and more I had puzzled, for those machines I'd seen I knew were far and beyond anything we ever conceived—machines of perfection, self-repairing, and self-energizing, self-perpetuating. They could make duplicates of themselves, and duplicate other, needed machines; they were intended to be eternal, everlasting.

"But the designers couldn't cope with some things that were beyond even their majestic imaginations—the imaginations that conceived these cities that had lived beyond—a million times beyond—what they had dreamed. They must have conceived some vague future. But not a future when the Earth died, and the Sun died, and even the universe itself died.

"Cold had killed them. They had heating arrangements, devices intended to maintain forever the normal temperature despite the wildest variations of the weather. But in every electrical machine, resistances, balance resistances, and induction coils, balance condensers, and other inductances. And cold, stark, spatial cold, through ages, threw them off. Despite the heaters, cold crept in colder—cold that made their resistance balances and their induction coils superconductors! That destroyed the city. Superconduction—like the elimination of friction, on which all things must rest. It is a drag and a thing engineers fight forever. Resistance and friction must finally be the rest and the base of all things, the force that holds the great bed bolts firm and the brakes that stop the machines when needed.

"Electrical resistance died in the cold and the wonderful machines stopped for the replacement of defective parts. And when they were replaced, they, too, were defective. For what months must that constant stop—replacement—start—stop—replacement have gone on before, at last defeated forever, those vast machines must bow in surrender to the in-

evitable? Cold had defeated them by defeating and removing the greatest obstacle of the engineers that built them—resistance.

"They must have struggled forever—as we would say—through a hundred billion years against encroaching harshness of nature, forever replacing worn, defective parts. At last, defeated forever, the great power plants, fed by dying atoms, had been forced into eternal idleness and cold. Cold conquered them at last.

"They didn't blow up. Nowhere did I see a wrecked machine; always they had stopped automatically when the defective resistances made it impossible to continue. The stored energy that was meant to re-start those machines after repairs had been made had long since leaked out. Never again could they move, I knew.

"I WONDERED how long they had been, how long they had gone on and on, long after the human need of them had vanished. For that vast city contained only a very few humans at the end. What untold ages of lonely functioning perfection had stretched behind those at-last-defeated mechanisms?

"I wandered out, to see perhaps more, before the necessary end came to me, too. Through the city of death. Everywhere little self-contained machines, cleaning machines that had kept that perfect city orderly and neat stood helpless and crushed by eternity and cold. They must have continued functioning for years after the great central power stations failed, for each contained its own store of energy, needing only occasional recharge from the central stations.

"I could see where breaks had occurred in the city, and, clustered about those breaks were motionless repair machines, their mechanisms in positions of work, the debris cleared away and care-

fully stacked on motionless trucks. The new beams and plates were partly attached, partly fixed and left, as the last dregs of their energy was fruitlessly expended in the last, dying attempts of that great body to repair itself. The death wounds lay unattended.

"I started back up. Up to the top of the city. It was a long climb, an infinite, weary climb, up half a mile of winding ramps; past deserted, dead homes; past, here and there, shops and restaurants; past motionless little automatic passenger cars.

"Up and up, to the crowning gardens that lay stiff and brittle and frozen. The breaking of the roof must have caused a sudden chill, for their leaves lay green in sheaths of white, frozen air. Brittle glass, green and perfect to the touch. Flowers, blooming in wonderful perfection showed still; they didn't seem dead, but it didn't seem they could be otherwise under the blanket of cold.

"Did you ever sit up with a corpse?" Bob looked up at us—through us. "I had to once, in my little home town where they always did that. I sat with a few neighbors while the man died before my eyes. I knew he must die when I came there. He died—and I sat there all night while the neighbors filed out, one by one, and the quiet settled. The quiet of the dead.

"I had to again. I was sitting with a corpse then. The corpse of a dead world in a dead universe, and the quiet didn't have to settle there; it had settled a billion years ago, and only my coming had stirred those feeble, protesting ghosts of eon-dead hopes of that planet to softly whining protest—protest the wind tried to sob to me, the dead wind of the dead gases. I'll never be able to call them inert gases again. I know. I know they are dead gases, the dead-gases of dead worlds.

"And above, through the cracked crystal of the rook, the dying suns

AST—1

looked down on the dead city. I couldn't stay there. I went down. Down under layer after layer of buildings, buildings of gleaming metal that reflected the dim, blood light of the Sun outside in carmine stains. I went down and down, down to the machines again. But even there hopelessness seemed more intense. Again I saw that agonizing struggle of the eternally faithful machines trying to repair themselves once more to serve the masters who were dead a million million years. I could see it again in the frozen, exhausted postures of the repair machines, stilled forever in their hopeless endeavors, the last poor dregs of energy spilled in fruitless conflict with time.

"It mattered little. Time himself was dying now, dying with the city and the planet and the universe he had killed.

"But those machines had tried so hard to serve again—and failed. Now they could never try again. Even they—the deathless machines—were dead.

"I went out again, away from those machines, out into the illimitable corridors, on the edge of the city. I could not penetrate far before the darkness became as absolute as the cold. I passed the shops where goods, untouched by time in this cold, still beckoned those strange humans, but humans for all that; beckoned the masters of the machines that were no more. I vaguely entered one to see what manner of things they used in that time.

"I nearly screamed at the motion of the thing in there, heard dimly through my suit the strangely softened sounds it made in the thin air. I watched it stagger twice—and topple. I cannot guess what manner of storage cells they had—save that they were marvelous beyond imagination. That stored energy that somehow I had released by entering was some last dreg that had remained through a time as old as our planet now. Its voice was stilled forever. But it drove me out—on.

AST-2

"It had died while I watched. But somehow it made me more curious. I wondered again, less oppressed by utter death. Still, some untapped energy remained in this place, stored unimaginably. I looked more keenly, watched more closely. And when I saw a screen in one office, I wondered. It was a screen. I could see readily it was television of some type. Exploratively, I touched a stud. Sound! A humming, soft sound!

"To my mind leaped a picture of a system of these. There must be—inter-connected—a vast central office somewhere with vaster accumulator cells, so huge, so tremendous in their power once, that even the little microfraction that remained was great. A storage system untouchable to the repair machines—the helpless, hopeless power machines.

"IN AN INSTANT I was alive again with hope. There was a strange series of studs and dials, unknown devices. I pulled back on the stud I had pressed, and stood trembling, wondering. Was there hope?

"Then the thought died. What hope? The city was dead. Not merely that. It had been dead, dead for untold time. Then the whole planet was dead. With whom might I connect? There were none on the whole planet, so what mattered it that there was a communication system.

"I looked at the thing more blankly. Had there been—how could I interpret its multitudinous devices? There was a thing on one side that made me think of a telephone dial for some reason. A pointer over a metal sheet engraved with nine symbols in a circle under the arrow of the pointer. Now the pointer was over what was either the first or the last of these.

"Clumsily, in these gloves, I fingered one of the little symbol buttons inlaid in the metal. There was an unexpected

click, a light glowed on the screen, a lighted image! It was a simple projection—but what a projection! A three-dimensional sphere floated, turning slowly before my eyes, turning majestically. And I nearly fell as understanding flooded me abruptly. The pointer was a selector! The studs beneath the pointer I understood! Nine of them. One after the other I pressed, and nine spheres—each different—swam before me.

"And right there I stopped and did some hard thinking. Nine spheres. Nine planets. Earth was shown first—a strange planet to me, but one I knew from the relative size and the position of the pointer must be Earth—then, in order, the other eight.

"Now—might there be life? Yes. In those nine worlds there might be, somewhere.

"Where? Mercury—nearest the Sun? No, the Sun was too dead, too cold, even for warmth there. And Mercury was too small. I knew, even as I thought, that I'd have one good chance because whatever means they had for communication wouldn't work without tremendous power. If those incredible storage cells had the power for even one shot, they had no more. Somehow I guessed that this apparatus might incorporate no resistance whatever. Here would be only very high frequency alternating current, and only condensers and inductances would be used in it. Supercooling didn't bother them any. It improved them. Not like the immense, direct-current power machinery.

"But where to try? Jupiter? That was big. And then I saw what the solution must be. Cold had ruined these machines, thrown them off by making them too-perfect conductors. Because they weren't designed to defend themselves against spatial cold. But the machines—if there were any—on Pluto for instance, must originally have been

designed for just such conditions! There it had always been cold. There it always would be cold.

"I looked at that thing with an intensity that should have driven my bare eyesight to Pluto. It was a hope. My only hope. But—how to signal Pluto? They could not understand! If there were any 'they.'

"So I had to guess—and hope. Somehow, I knew, there must be some means of calling the intelligent attendant, that the user might get aid. There was a bank of little studs—twelve of them—with twelve symbols, each different, in the center of the panel, grouped in four rows of three. I guessed. Duodecimal system.

"Talk of the problems of interplanetary communication! Was there ever such a one? The problem of an anachronism in the city of the dead on a dead planet, seeking life somewhere, somehow.

"There were two studs, off by themselves, separate from the twelve—one green, one red. Again I guessed. Each of these had a complex series of symbols on it, so I turned the pointer on the right to Pluto, wavered, and turned it to Neptune. Pluto was farther. Neptune had been cold enough; the machines would still be working there, and it would be, perhaps, less of a strain on the dregs of energy that might remain.

"I depressed the green symbol hoping I had guessed truly, that red still meant danger, trouble and wrongness to men when that was built—that it meant release and cancellation for a wrongly pressed key. That left green to be an operative call signal.

"Nothing happened. The green key alone was not enough. I looked again, pressed the green key and that stud I had first pressed.

"The thing hummed again. But it was a deeper note now, an entirely different sound, and there was a frenzied

clicking inside. Then the green stud kicked back at me. The Neptune key under the pointer glowed softly; the screen began to shimmer with a grayish light. And, abruptly, the humming groaned as though at a terrific overload; the screen turned dull; the little signal light under Neptune's key grew dim. The signal was being sent—hurled out.

"Minute after minute I stood there, staring. The screen grew very slowly, very gently duller, duller. The energy was fading. The last stored dribble was being hurled away—away into space. 'Oh,' I groaned, 'it's hopeless—hopeless to—'

"I'd realized the thing would take hours to get to that distant planet, traveling at the speed of light, even if it had been correctly aligned. But the machinery that should have done that through the years probably had long since failed for lack of power.

"But I stood there till the groaning motors ceased altogether, and the screen was as dark as I'd found it, the signal light black. I released the stud then, and backed away, dazed by the utter collapse of an insane hope. Experimentally I pressed the Neptune symbol again. So little power was left now, that only the faintest wash of murky light projected the Neptune image, little energy as that would have consumed.

"I went out. Bitter. Hopeless. Earth's last picture was long, long since painted—and mine had been the hand that spent Earth's last poor resource. To its utter exhaustion, the eternal city had strived to serve the race that created it, and I, from the dawn of time had, at the end of time, drained its last poor atom of life. The thing was a thing done.

"SLOWLY I went back to the roof and the dying suns. Up the miles of winding ramp that climbed a half mile straight up. I went slowly—only life knows haste—and I was of the dead.

"I found a bench up there—a carved bench of metal in the midst of a riot of colorful, frozen flowers. I sat down, and looked out across the frozen city to the frozen world beyond, and the freezing red Sun.

"I do not know how long I sat there. And then something whispered in my mind.

"We sought you at the television machine."

"I leaped from the bench and stared wildly about me.

"It was floating in the air—a shining dirigible of metal, ruby-red in that light, twenty feet long, perhaps ten in diameter, bright, warm orange light gleaming from its ports. I stared at it in amazement.

"It—it worked!" I gasped.

"The beam carried barely enough energy to energize the amplifiers when it reached Neptune, however," replied the creature in the machine.

"I couldn't see him—I knew I wasn't hearing him, but somehow that didn't surprise me.

"Your oxygen has almost entirely given out, and I believe your mind is suffering from lack of oxygen. I would suggest you enter the lock; there is air in here."

"I don't know how he knew, but the gauges confirmed his statement. The oxygen was pretty nearly gone. I had perhaps another hour's supply if I opened the valves wide—but it was a most uncomfortably near thing, even so.

"I got in. I was beaming, joyous. There was life. This universe was not so dead as I had supposed. Not on Earth, perhaps, but only because they did not choose! They had space ships! Eagerly I climbed in, a strange thrill running through my body as I crossed the threshold of the lock. The door closed behind me with a soft *shush* on its soft gaskets, locked, and a pump whined somewhere for a moment; then the inner door opened. I stepped in—

and instantly turned off my alcohol burners. There was heat—heat and light and air!

"In a moment I had the outer lacings loose, and the inner zipper down. Thirty seconds later I stepped out of the suit, and took a deep breath. The air was clean and sweet and warm, invigorating, fresh-smelling, as though it had blown over miles of green, Sun-warmed fields. It smelled alive, and young.

"THEN I looked for the man who had come for me. There was none. In the nose of the ship, by the controls, floated a four-foot globe of metal, softly glowing with a warm, golden light. The light pulsed slowly or swiftly with the rhythm of his thoughts, and I knew that this was the one who had spoken to me.

"You had expected a human?" he thought to me. 'There are no more. There have been none for a time I cannot express in your mind. Ah, yes, you have a mathematical means of expression, but no understanding of that time, so it is useless. But the last of humanity was allowed to end before the Sun changed from the original G-O stage—a very, very long time ago.'

"I looked at him and wondered. Where was he from? Who—what—what manner of thing? Was it an armor-incased living creature or another of the perfect machines?

"I felt him watching my mind operate, pulsing softly in his golden light. And suddenly I thought to look out of the ports. The dim red suns were wheeling across those ports at an unbelievable rate. Earth was long since gone. As I looked, a dim, incredibly dim, red disk suddenly appeared, expanded—and I looked in awe at Neptune.

"The planet was scarcely visible when we were already within a dozen millions of miles. It was a jeweled world. Cities—the great, perfect cities—still glowed. They glowed in soft, golden light above, and below, the harsher,

brighter blue of mercury vapor lighted them.

"He was speaking again. 'We are machines—the ultimate development of man's machines. Man was almost gone when we came.

"With what we have learned in the uncounted dusty megayears since, we might have been able to save him. We could not then. It was better, wiser, that man end than that he sink down so low as he must, eventually. Evolution is the rise under pressure. Devolution is the gradual sinking that comes when there is no pressure—and there is no end to it. Life vanished from this system—a dusty infinity I cannot sort in my memory—my type memory, truly, for I have complete all the memories of those that went before me that I replace. But my memory cannot stretch back to that time you think of—a time when the constellations—

"It is useless to try. Those memories are buried under others, and those still buried under the weight of a billion centuries.

"We enter'—he named a city; I cannot reproduce that name—'now. You must return to Earth though in some seven and a quarter of your days, for the magnetic axis stretches back in collapsing field strains. I will be able to inject you into it, I believe.'

"So I entered that city, the living city of machines, that had been when time and the universe were young.

"I did not know then that, when all this universe had dissolved away, when the last sun was black and cold, scattered dust in a fragment of a scattered universe, this planet with its machine cities would go on—a last speck of warm light in a long-dead universe. I did not know then.

"You still wonder that we let man die out?" asked the machine. 'It was best. In another brief million years he would have lost his high estate. It was best.

"Now we go on. We cannot end, as he did. It is automatic with us."

"I felt it then, somehow. The blind, purposeless continuance of the machine cities I could understand. They had no intelligence, only functions. These machines—these living, thinking, reasoning investigators—had only one function, too. Their function was slightly different—they were designed to be eternally curious, eternally investigating. And their striving was the more purposeless of the two, for theirs could reach no end. The cities fought eternally only the blind destructiveness of nature, wear, decay, erosion.

"But their struggle had an opponent forever, so long as they existed. The intelligent—no, not quite intelligent, but something else—curious machines were without opponents. They had to be curious. They had to go on investigating. And they had been going on in just this way for such incomprehensible ages that there was no longer anything to be curious about. Whoever, whatever designed them gave them function and forgot purpose. Their only curiosity was the wonder if there might, somewhere, be one more thing to learn.

"That—and the problem they did not want to solve, but must try to solve, because of the blind functioning of their very structure.

"Those eternal cities were limited. The machines saw now that limit, and so the hope of final surcease in it. They worked on the energy of the atom. But the masses of the suns were yet tremendous. They were dead for want of energy. The masses of the planets were still enormous. But they, too, were dead for want of energy.

"THE MACHINES there on Neptune gave me food and drink—strange, synthetic foods and drinks. There had been none on all the planet. They, perforce, started a machine, unused in a

billion years and more, that I might eat. Perhaps they were glad to do so. It brought the end appreciably nearer, that vast consumption of mine.

"They used so very, very little, for they were so perfectly efficient. The only possible fuel in all the universe is one—hydrogen. From hydrogen, the lightest of elements, the heaviest can be built up, and energy released. They knew how to destroy matter utterly to energy, and could do it.

"But while the energy release of hydrogen compounding to the heavy elements is controllable, the destruction of matter to energy is a self-regenerative process. Started once, it spreads while matter lies within its direct, contiguous reach. It is wild, uncontrollable. It is impossible to utilize the full energy of matter.

"The suns had found that. They had burned their hydrogen until it was a remnant so small the action could not go on.

"On all Earth there was not an atom of hydrogen—nor was there on any planet, save Neptune. And there the store was not great. I used an appreciable fraction while I was there. That is their last hope. They can see the end, now.

"I stayed those few days, and the machines came and went. Always investigating, always curious. But there is in all that universe nothing to investigate save the one problem they do not want to solve—the problem they are sure they cannot solve.

"The machine took me back to Earth, set up something near me that glowed with a peculiar, steady, gray light. It would fix the magnetic axis on me, on my location, within a few hours. He could not stay near when the axis touched again. He went back to Neptune, but a few millions of miles distant, in this shrunken mummy of the solar system.

"I stood alone on the roof of the city, in the frozen garden with its deceptive look of life.

"And I thought of that night I had spent, sitting up with the dead man. I had come and watched him die. And I sat up with him in the quiet. I had wanted some one, any one to talk to.

"I did then. Overpoweringly it came to me I was sitting up in the night of the universe, in the night and quiet of the universe, with a dead planet's body, with the dead, ashen hopes of countless, nameless generations of men and women. The universe was dead, and I sat up alone—alone in the dead hush.

"Out beyond, a last flicker of life was dying on the planet Neptune—a last, false flicker of aimless life, but not life. Life was dead. The world was dead.

"I knew there would never be another sound here. For all the little remainder of time. For this was the dark and the night of time and the universe. It was inevitable, the inevitable end that had been simply more distant in my day—in the long, long-gone time when the stars were mighty lighthouses of a mighty space, not the dying, flickering candles at the head of a dead planet.

"It had been inevitable then; the candles must burn out for all their brave show. But now I could see them guttering low, the last, fruitless dregs of

energy expiring as the machines below had spent their last dregs of energy in that hopeless, utterly faithful gesture—to attempt the repair of the city already dead.

"The universe had been dead a billion years. It had been. This, I saw, was the last radiation of the heat of life from an already-dead body—the feel of life and warmth, imitation of life by a corpse. Those suns had long and long since ceased to generate energy. They were dead, and their corpses were giving off the last, lingering life heat before they cooled.

"I ran. I think I ran—down away from the flickering, red suns in the sky. Down to the shrouding blackness of the dead city below, where neither light, nor heat, nor life, nor imitation of life bothered me.

"The utter blackness quieted me somewhat. So I turned off my oxygen valves, because I wanted to die sane, even here, and I knew I'd never come back.

"The impossible happened! I came to with that raw oxygen in my face. I don't know how I came—only that here is warmth and life.

"Somewhere, on the far side of that bismuth coil, inevitable still, is the dead planet and the flickering, guttering candles that light the death watch I must keep at the end of time."

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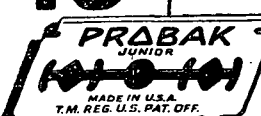
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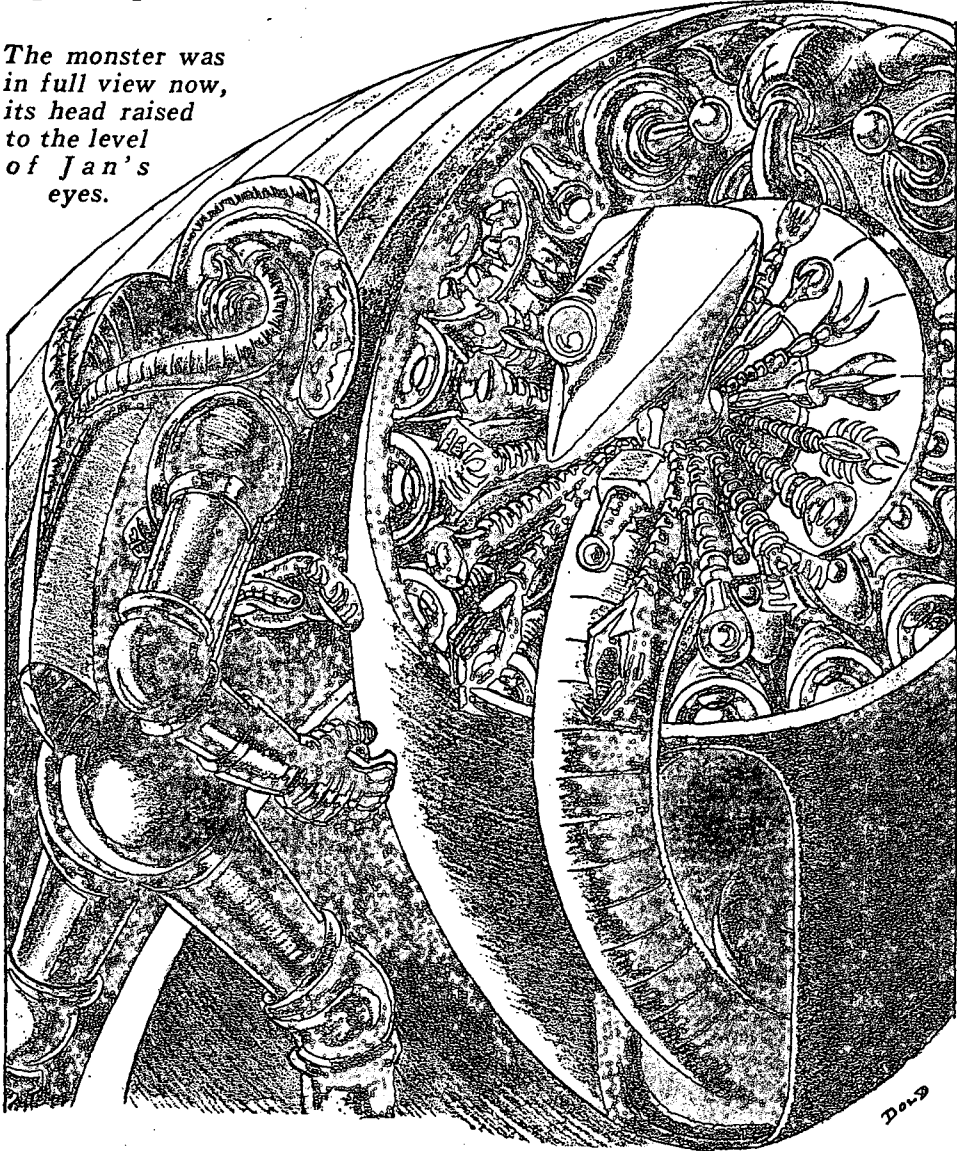
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Derelict

by Raymond Z. Gallun

*The monster was
in full view now,
its head raised
to the level
of Jan's
eyes.*



IT DRIFTED there in space, to the right of the Sun, its spherical hull half illumined and half in shadow. No native of the solar system could have guessed either its age or its origin. Battered, lifeless, desolate and for-

lorn, it betrayed a kinship both with the remote past and with the distant stars against the sharp pin points of which its bulk was limned.

Jan Van Tyren should have felt a surge of enthusiasm over his discovery

of this derelict vessel of the void. Yet he did not. Within him there was room for little but the gnawing ache of grief. Listlessly preoccupied, he stood before the periscope screen of his own trim craft, watching with only a shadow of interest the spheroid pictured in it.

His big, loose body seemed to droop without animation before his instruments. A tuft of yellow hair protruded, cynical and slovenly, from beneath his leather helmet. All the strength had been drained out of him. His blue eyes were clouded, as if he gazed less at reality than at some horror of memory.

He had seen blood often during his years with the Jupiter company. He'd seen death and revolt. Such things were incidental to colonization, to progress. But Greta and little Jan—they had been safe. That any one; even the horrid Loathi of the Jovian moon, Ganymede, might harm them, had seemed inconceivable. His young wife, his baby—murdered. The torturing vision of what had happened had been with him for days now. Three? Four? He didn't want to recall anything related to that vision.

He didn't want to forget it either. Nor was it possible to forget. He kept hearing the weird screams of the Loathi echoing inside him; he kept seeing their long, keen beaks, and their batlike bodies swooping crazily out of the Ganymede night. Here, where no one could observe, he allowed himself the relief of a silent snarl. The look on his gaunt, weather-beaten face was not an expression of hatred. He was past hatred. He was numb and lost, like an engine without a governor.

That was why he was out here in the void, with the cold stars around him. He was trying to escape from—he wasn't completely sure what. He was going back to Earth to paint pictures, and to seek in its mellow atmosphere of peace something that was

lacking in the cruel environment of Joraanin, the outpost of which he had been master. He was quitting cold—returning home to heal his soul.

Small wonder then that even a space ship which had floated without aim across the light years, perhaps from another galaxy, could not awaken in him a spark of real enthusiasm. Mystery and the promise of adventure no longer had any direct appeal.

Yet Jan Van Tyren was still a creature of habit. Though his mind was caught up in a maelstrom of pain, still the automatic part of him continued to function with some semblance of normalcy. He was an artist; so, almost unconsciously, the channels which his hobby had established in his brain began their intended work—taking note of form and color.

He saw the contrasts of light and shade playing their bizarre tricks with the details of the great globular hull. He saw the deep grooves that stray meteors had scored in a crisscross pattern on the lusterless gray shell of the derelict.

He took note of the slender rods projecting like the prongs of a bur from the vessel's form, and of the rows of windows that met his gaze blankly, as if they were eyes that wondered in an uncomprehending way what he and his flier might be. All this could have been a picture that a man might paint, starkly beautiful against the black background of the universe.

Then too, Jan Van Tyren was an engineer by profession; and though he wished to leave such matters buried in the past, once more the habit of long experience had its way. Something deep in Jan's being, detached from his other thoughts, wondered what marvels of invention and science a survey of the derelict might reveal.

These combined forces gave to him that small thread of interest. Life had no strong purpose any more, and he

was in no hurry to continue the two months of continuous flying that would bring him across the etheric desert to his native planet.

Van Tyren's hands flashed over controls with careless ease, as if they moved without the guidance of his brain. The space boat turned, beginning the graceful curve that would bring it alongside the spheroid. Across the periscope screen stars, reeled; then Jupiter appeared, a tiny belted bead millions of miles away. Around it were the specks of radiance that were its moons.

Finally the derelict came back into view, gigantic and near. It appeared to be some three hundred feet in diameter. The feeble light of the distant Sun shone on it, revealing in its lower hemisphere a ragged rent whose depths were shrouded in shadow.

JAN steered his flier into a position from which he could get a better glimpse of the interior of the spheroid, beyond the torn opening in its shell. Spear points of light pierced the thick shadows there, revealing crumpled masses of metal. But there was sufficient room for his purpose.

Without considering the possible danger of the move, and in fact quite indifferent now to such danger, Jan worked the guide levers and throttle of his craft. There were sharp bursts of incandescence from its rocket vents. It turned, swaying; then glided into the hole in the side of the derelict and came to rest amid the wreckage.

With what might have been a fragment of his old active spirit, Jan Van Tyren donned space armor. But his memories were still with him. He cursed once. No, it was not really a curse; the fury was lacking. There was only anguish in it. It was like the whimper of a big dog with a thorn in its foot.

He climbed through the airlock, and

for a minute stood quietly, viewing his surroundings. Somewhere gravity plates continued to function in this ancient wreck, for he had weight here—perhaps one third Earth-normal. Junk was everywhere in the cavernous interior, distorted and crumpled grotesquely. Yet the metal was bright and new.

Whatever colossal weapon had ripped the globular vessel open like this might have done so within the hour or a billion years ago, as far as any one could tell from visual inspection. There was no air; oxides didn't form; nothing moved, nothing changed. There was no sound in Jan's ears save the rustle of his own pulse. It was as if time had stopped in this minute speck of the universe. Only the derelict's aura of desertion, and the memory of the countless meteor scorings on its outer shell, suggested to Van Tyren its vast age.

Meteors are too rare to constitute a menace in the traveled lanes of the solar system, and in the interstellar void they are rare indeed. Lifetimes might go by before one of those minor collisions took place; and they were numbered in thousands.

Rearing from the débris was a stairway. Jan learned later to think of it by that term, though it was not a stairway such as men would find convenient to use. It was a pillar, fluted spirally after the fashion of the threads of a screw. At regular intervals pegs were set along these threads, to provide a grip for some kind of prehensile member.

The pillar swept upward to meet a broad roof. Sunlight, stabbing in from space, awoke an opalescent gleam on the metal surfaces of this queer means of ascent to whatever lay in the bulk of the derelict overhead.

Jan took hold of the pegs on the fluted column, and with easy surges hoisted his loose, muscular frame to-

ward the top. Beside the place where the pillar joined the ceiling was a trap-door. He fumbled with the lever that latched it. It slid aside, allowing him to pass through into a tiny square compartment which appeared to have the function of an airlock—for there was another similar trapdoor in its roof.

The lower entrance had closed beneath him, and now he unfastened the valve over his head and climbed into the chamber above.

DUST and silence and motionless mechanical grandeur reminiscent of the tomb of a dead Cyclops—that in brief was a description of the place. It was much larger than the room below. Through windows along one wall the Sun shone, gilding inert engines whose monstrous forms seemed capable of generating sufficient power to tear a planet from its orbit. Huge cylinders of opalescent metal reared upward. Flywheels which on Earth would have weighed hundreds of tons, rested in their pivot sockets. Cables, wires, and pipettes ran between colossal, generator-like contrivances. Crystal tubes stood in webby tripods, or were supported in framework attached to the ceiling; but no energy flowed in the delicate filaments that formed their vitals, and there was no way for a man to tell what purposes they were intended to fulfill.

Between the windows massive rods were mounted, pointing through the external wall of the sphere, as the weapons of a battleship would do. Whatever the race that had been responsible for this outlay, it was certain that it had been a race of fighters.

Jan Van Tyren, browsing listlessly among these wonders of another solar system, obtained his first direct hint of what the owners of the ship had been like. Sinuous patches of gray ash, contorted so as to still portray the agonies of death, sprawled here and there on the floor. Brown flakes, resembling bits

of parchment, were mixed with the ash—the remnant, probably, of chitinous exoskeletons.

The crew of the derelict had been slain. The pitted plating of the floor around the remains of each of their bodies, showed that clearly. Something hot and corrosive had blasted them out of existence. They had battled valiantly, but they had been overcome.

Jan saw a silvery object lying beside one of the areas of ash. He picked it up. A mummified fragment of flesh, suggestive of the foot of a bird, clung to it, its three prehensile toes curved fiercely around the grip and trigger button of the small weapon.

Yes, those unknowns had fought as men would do; but they had failed. Van Tyren's set face exhibited a fleeting sneer as he hurled the object aside.

He went on with his explorations. The dust of remote mortality swirled up in the path of his careless feet, filling the Sunbeams from the windows with eddying motes. There was air here to support the motes; but whether it was breathable after the passage of ages seemed hardly probable.

Jan paused before a switchboard. His gauntleted hand fumbled hesitantly over a dial at its center. He turned the dial to the right. A faint vibration was transmitted to his fingers. He turned the dial more, not knowing that his act was perhaps altering a detail in the normal course of destiny. The vibration increased. He stood back, waiting.

Beneath the framework mounting of the switchboard was a cabinet of smooth, tawny material. The front of it opened now, revealing a darkened interior. From the opening a slender head was thrust, swaying with rhythmic cadence from side to side. It had a single eye, as expressionless as the lens of a camera, which in truth the orb seemed to be.

There was no mouth in evidence, nor

any need of one; for this thing, though it presented characteristics commonly associated with living creatures, yet was marked with the unmistakable stamp of the machine. The triangular head had the purple gloss of the other metallic objects in the room. The intricate appendages which projected around its throat, forming a sort of frilled collar, were of the same substance. Beneath them the slender length of the thing was revealed as it crept in serpentine fashion from the cabinet. Its body was composed of thousands of glistening segments, as minutely tooled as the parts of a watch.

The monster was in full view now, its head raised to the level of Jan's eyes. Instinctively he had backed away, though somehow the idea of danger did not occur to him. Perhaps he had left normal caution behind him on Ganymede.

For a time, nothing more happened. The triangular head continued to sway from side to side, but that was all. Van Tyren stood statuesquely, his feet spread wide apart in bullish defiance directed not so much against this amazing fabrication as against his own aching memories. Even the tangible truth of this fantastic episode could not wholly smother the agony of the recent past.

Presently the serpentine robot turned and glided off among the surrounding maze of machines. With a grace that was at once beautiful and abhorrent it writhed its way to an apparatus at the center of the room. Its glittering appendages touched controls skillfully.

A BLAST of air surged from vents high up on the walls. Jan felt the thrust of it against his armor, and saw the ashes of the derelict's dead crew go swirling away into other vents along with the lifeless vapor that had been sealed for so many eons in this tomb of space.

In response to some further manipulation of dials and switches on the part of the robot, a light, restful blue began to burn in a crystal tube above Jan's head. He looked up at it and it seemed to exert a soothing, hypnotic influence upon him. He did not even protest when the unknown that he had freed returned to his side and made a gentle attempt to remove his space armor. His own fingers closed on the fastenings and helped those delicate metallic members to complete the task.

Free of the cumbersome attire, he stood eagerly in those cool, blue rays. They appeared to probe to every corner of his being, drawing all the ache and tension out of his tortured nerves.

The grief in his mind blurred to a diffused sweetness. At first he was almost terrified. It was sacrilege to let the thought of his wife and son fade away from him so. Then, no longer wishing to think, he surrendered completely to the healing, Lethean influence of the rays.

The air around him now was cold and refreshing. He sucked in great lungfuls of it. He flexed his muscles indolently, and at last his rugged face broke into a smile. Somewhere music whispered—exotic music out of a time and region too distant to fathom.

The automaton was gliding here and there with no sound except a soft, slithering jingle. It was putting things in order, inspecting and readjusting this device and that. Jan wondered how many thousands of millennia had gone by since any of those machines had been called upon to function. He wondered too at the unfathomable kindness of his queer host, and whether it had read his mind, learning of the pain that had crushed him.

But the rays made him inclined rather to accept than to question, and for a while he did not pursue his ideas further. He was in no hurry. He had not a care or responsibility in the uni-

verse. There was plenty of time for everything.

After perhaps an hour under the tube of the blue light, Jan Van Tyren realized that he was hungry. Little food had passed his lips since the quick departure from Ganymede. He put on his space suit again, descended through the airlock by which he had entered this chamber and shinned down the spirally fluted pillar. Before he had reached the bottom the robot was descending above him, its flexible, snake-like body sliding easily in the spiral grooves. The thing had deserted its tasks to follow him.

JAN proceeded to gather certain food articles from the store of concentrated rations aboard his space boat. But before he had collected what he wanted, the automaton was beside him, trying to help. Jan attempted to shove those gleaming claws away, but they were persistent; and finally, in a mood to accept the gentle suggestion, he capitulated, allowing the robot to take several containers from him.

"I think I know what you are," Jan chuckled inside his oxygen helmet. "You were made to take care of the various small wants of the people who manned this ship. Now that there isn't any one else to play servant to, you've picked me as your boss."

He collected a few other articles—the sleeping bag of his flier, several astronomical instruments and the case containing his artist's equipment—and thrust them into the waiting arms of the robot.

"Might as well take this stuff along too," he said, "so I won't have to climb down again and get it."

He paused to see what the friendly mechanism would do next. The result was just faintly amusing. After a moment of uncertainty it approached him. A stubby member which was part of the frill of appendages around its

throat elongated itself like a telescope, coiled its metal length around his waist and hoisted him easily off his feet. Then the serpentine monster made its weaving way to the stair and commenced to ascend with its new master and the bulky equipment.

"Hey!" Van Tyren protested. "This is making a good thing too good! I'm not a cripple!"

But even though the automaton may have possessed a means of divining the telepathic waves of the thoughts behind Jan's words, still it had its way with him.

The man, hardened and self-reliant though he had always been, accepted the mild, emasculating yoke of a monster of which he really knew nothing, quite as trustingly as a child accepts the love of its mother. The blue ray was not penetrating his body here, but its care-effacing power still persisted. And he had no thought of the possibly dangerous consequences of the spell.

He remembered the Mercurian who had valeted one of the friends of his student days. Khambee was the Mercurian's name—a curious elf whose unobtrusive yet insistent indulgence was much the same as that of this mechanical slave.

"Khambee the second," Van Tyren pronounced good-naturedly, bestowing the nomen on the automaton that bore him. "It fits you."

In the chamber of wonders beyond the airlock, Jan set out his meal and ate, while Khambee watched with his camera eye, as if to learn the intricacies of the task.

Then he crept through an opening in the wall and returned with a bowl containing cubes of a golden, translucent compound that emitted a pleasant odor. He set the bowl beside the man.

Van Tyren took one of the cubes, tasted it, and devoured it without considering that, to his Earthly system, the substance might be poisonous. But he

experienced no ill effects. The food was slightly fibrous, but sweet and tasty. He consumed more of it with relish.

The blue rays from the tube on the ceiling poured their lulling effulgence over him. The whisper of music, thin and threadlike and soothing, worked its magic upon his senses. Jan crouched on the floor, his head nodding against his knees.

So he remained for a long time, neither awake nor quite asleep, his brain and nerves pervaded by a deliciously restful quasiconsciousness. Khambee had disappeared, perhaps to attend to some obscure matter in another part of the vessel.

SUCH was the beginning of Jan Van Tyren's adventure on the derelict. As yet he gave the future no attention, living each careless moment as it came; thinking, but not too deeply. Never before had the instinct of the empire builder in him been so completely submerged.

Just to amuse himself he set up his astronomical instruments and took minute observations of both Jupiter and the stars at intervals of an hour, to discover what sort of path the derelict was following. The angular change in the positions of those celestial landmarks told the story.

The vessel was a moon of the planet Jupiter, swinging around it slowly in an immense orbit many millions of miles across. Probably it had been doing so for eons before men had considered seriously the problem of traffic between worlds.

The fact that it had never been discovered until he had stumbled upon it was easy to explain. Without guidance it would be simpler to find an individual grain of sand on a beach, than to locate so small a satellite in the vastness of the etheric desert.

Now, however, with distances and

velocities measured perfectly, there would be no trouble in estimating where the vessel would be at a given second. Jan fumbled with the paper on which he had made his calculations, and then carelessly tossed it aside.

Like the good servant he was, Khambee, who happened to be present, picked it up and placed it in a little case fastened at his throat.

Looking at the stars gleaming so gloriously in the ebon firmament had given Jan Van Tyren an inspiration.

"Men are fools," he confided to Khambee. "Trouble and misfortune are all the reward they get for their struggles. It was the same with the serpent folk who made you. Those of them who formed the crew of this vessel were killed—murdered.

"Why can't we escape from all that sort of nonsense, Khambee? Why can't we fix up this ship so that it can travel out to the stars? What an adventure that would be! Vagabonding from one planet to another without any responsibilities, and without ever returning to the solar system! That would be something worthwhile, Khambee."

Jan was only talking for companionship's sake, attempting to give an idle dream a semblance of reality. He did not believe that what he spoke of was possible. There was the matter of food, water, and energy. It seemed unlikely that this decrepit derelict's supply of each was sufficient for such a venture.

However, Khambee had greater powers at his command than Van Tyren could guess. And there had been built into the inorganic frame of him an astute understanding that penetrated the very motives and purposes animating flesh, bone, nerves and brain tissue.

He appeared to listen attentively to the rustling thought waves of his human master. Then, impelled by the complex urges which the genius of his creator had stamped indelibly into the

metal and crystal intricacies of his being, he returned to the tasks which he was meant to do.

And Jan Van Tyren, who had established and bossed Joraanin, the Ganymede colony, continued with his idle play. He slept, he ate exotic foods, he wandered about the ship, he dreamed; but most of all he painted, setting up his easel wherever whim might suggest. And the marvels around him seemed, by their very aura of strangeness, to direct and control his skillful fingers.

He painted great engines with shafts of Sunlight twinkling on them; he studied the highlights that shifted elusively in the hollow grooves of the pillars which the sinuous folk of long ago had used as stairways, and he transferred the forms of those stairways to canvas.

He painted Khambee at work with a flaming welding tool, slim, efficient, and almost noiseless. He even painted scenes and subjects of Earth and Ganymede—pleasant reminiscences, for all that was unpleasant had been shoved far into the background of his mind.

A white collie of his childhood. A jagged mountain jutting out of the red desert of Ganymede. Greta, blond and pretty and smiling. Little Jan with his stiff, yellow curls. Such were the subjects of his pictures. He thought of his wife and child, but only of the happy incidents of their lives together.

The horror was blurred and distant. The blue rays saw to that. And so a will not his own, and perhaps not even Khambee's, but belonging to a serpentine monster dead for ages, controlled Jan Van Tyren.

At odd moments he watched space, and felt the yearning pull of the stars. Thus many days must have gone by. He did not bother to keep track.

THE TIME CAME when he was aroused from slumber by a throbbing

sound, soft, but eloquent of titanic forces at work. He crept out of his sleeping bag and stared at the source of the disturbance. Huge flywheels were spinning. He felt a powerful thrust as the ship's propulsive equipment took hold for a fraction of a second.

Then Khambee, worming his slender shape like a weaving shuttle here and there among the machinery, broke the contacts of massive switches. The activity died to silence once more. But the test had been made and Jan sensed that it had been successful.

He hurried forward: "We've got enough power then?" he demanded huskily. "Have we?"

For an answer the robot opened the side of a cylindrical arrangement, and with the clawed tip of an appendage, pointed to the maze of coils and crystal that glowed with heat inside.

Jan studied the apparatus intently for several minutes. Much of it was beyond his grasp; but there were places where tangible fact corresponded with human theory. Energy from the cosmic ray which exists everywhere in space. Limitless, inexhaustible energy! The engines of the vessel were worked by it.

"I see," Van Tyren commented quietly. "The power problem is solved. Have we enough food, air, and water?"

Khambee led him through the labyrinths of the ship to a place where he had never been before—a hall lined with vast, transparent tanks, most of them filled with a clear liquid that had been sealed up for ages. There was water enough here to make the ship a little world, independent of outside sources, since none could escape from the sealed hull.

Farther down the corridor were other tanks filled with preserved food supplies, and beyond them were extensive chambers where odd, bulbous things

were growing under the intense light of great globes.

Were those growths plants of some kind, or artificial cultures to be classified somewhere between the organic and the inorganic? Their color was deep-green. Was it chlorophyll, or a substance analagous in function to the chlorophyll of green plants? Perhaps it did not matter. Here food was being produced under the action of the intense light.

Carbon dioxide, piped to these chambers from all parts of the craft, was being split up by those queer growths, and the oxygen in it was being freed to refresh the atmosphere of the ship. Khambee had started a process that had ben dead for uncounted millenniums; now it could go on indefinitely.

Nourishment, water and oxygen—everything essential to life had been taken care of.

"Speed?" Jan questioned. "Can we build up sufficient speed to travel between the stars without making the trip endless?"

It was an important query. No man-built ship could have reached the outer galaxies in a lifetime, though there were experiments in progress which in a decade or so might produce promising results.

Khambee's tactile appendages swung toward a huge power-distributor tube near by in a gesture of confidence.

Jan was satisfied. "Then we're going," he said. "There's not much left for me here in the solar system."

His voice was steady, but the thrill of adventures to come made his heart pound and sent tingling prickles through his scalp muscles.

Khambee the unfathomable offered no protest, yet his actions indicated that there was work still to be done.

He clutched his master's arm and drew him along gloomy passages to a storeroom filled with various machinery

parts and other supplies. Here he selected a great sheaf of metal plates, and bore it back to the airlock which opened into the wrecked compartment where Jan's space boat was housed. The silvery length of him passed through it, lugging the heavy load.

Jan Van Tyren donned his air-tight armor and followed.

FOR SEVERAL HOURS he watched the slave robot patch the great rent. During that time the effects of the blue ray must have worn off; for presently, of his own volition, he tried to help, holding the massive plates steady while his snakelike henchman welded them into place with a flame tool. Khambee accepted the assistance without protest.

Jan was more his own self now—cool, dominant, purposeful, making ready for a venture which no man had yet attempted.

At last the job was finished. The wreckage of an ancient battle was neatly cleared away, the jagged hole was covered, and only an oval door was left, through which the flier might pass when necessary.

The eye lens of the robot met Jan's gaze briefly. "All is prepared," it seemed to say.

Van Tyren nodded, his weather-beaten face grim, hard, smiling. "Good!" he commented.

He shinned up the spiral pillar. Khambee was close behind, but he did not offer to help.

Nor did he go immediately to the controls of the engines. Instead he drew the man to a broad, white screen, which was part of a complex apparatus near by. He snapped switches and twirled dials expertly.

Pictures appeared in the screen—bleak, rolling desert and tortured gorges. Then an oasis where there was water, and where the radioactive ores

underground provided enough heat to permit the growth of vegetation. At its center was a little, rough city under a crystal dome. Joraanin, the Gany-mede colony!

Around it men and loyal Loathi were intrenched, fighting off hordes of rebel Loathi that circled on batlike wings above, their long beaks gleaming. The revolt was still in progress. A strong hand was needed there to end this chaos and death. Yes, needed. The Bensonium mines—

Jan Van Tyren stood with the oxygen helmet in his hands, his mouth puckering pensively. A thousand thoughts swarmed in his brain; problems, which he was sure he'd thrashed out before. Impressions of courage, of fear, of loyalty and of love. The Loathi. Greta. Little Jan. Revenge. No, not revenge—constructive coöperation. That was his policy. But he didn't have a policy any more, did he? An empire builder. But he'd given up empire building. Or had he?

Jan's eyes roved the gleaming, segmented form of Khambee beside him. All at once truth came out of the muddle. He saw one of the robot's purposes clearly at last. Khambee had been the slave of a fighting race. A worker, and when the occasion demanded—a dealer. He, Jan Van Tyren, had been healed and freshened. His sense of

responsibilities to come had returned, and he was ready for them now.

"I suppose I could still choose to leave the solar system, and you would obey me," he said. "But you probably knew all along what my final choice would be. Return to your cabinet, Khambee. I'm going back to Joraanin—alone. It's my job."

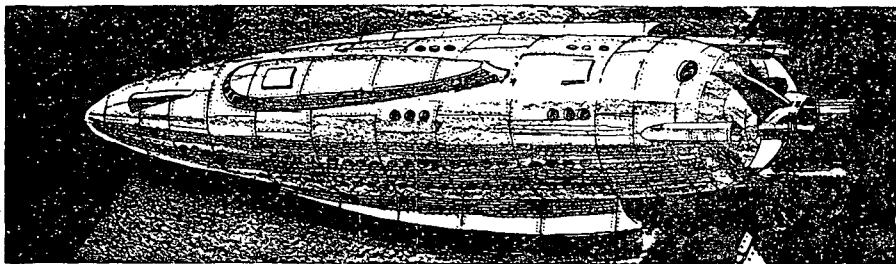
Khambee helped him gather his various possessions together, and to carry them down to the space boat. The exit door of the compartment rolled aside. Sunlight stabbed inward, causing the automaton's body to reflect a thousand shifting, iridescent colors.

Just as Van Tyren was entering the flier, Khambee thrust a paper into his hands. It was the paper on which Jan had recorded his astronomical measurements and had calculated the orbit and velocity of the derelict.

He felt more than ever that Khambee could read his innermost thoughts. There was a bit of tightness in his throat then.

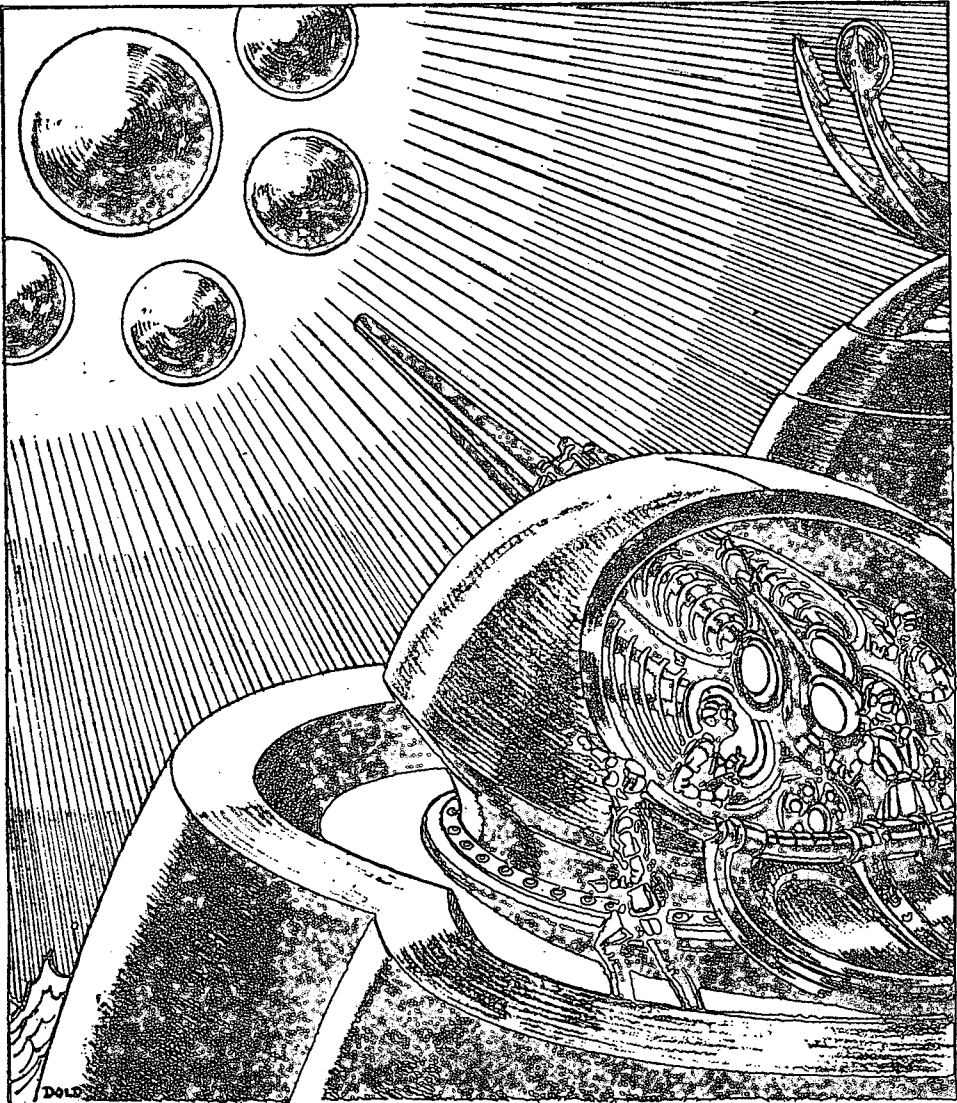
"Thanks, Khambee," he said very seriously. "This might be useful. I may want to come back some time. I may need to come back."

The flier was in space. Jan Van Tyren hummed a tune that was lost in the growl of the rockets. Ahead lay Jupiter and its satellites. Beyond them the bright stars seemed to smile.



Islands of the Sun (Conclusion)

by Jack Williamson



V.

TWELVE DAYS MORE, perhaps," said Teddu Len. "Then, we are done."

The old scientist was sitting with Ken in an office in the fortress. Heavy, in-

sulated walls shut out the pitiless heat of the prison planet; cool air rustled from a ventilating fan; the room was soft with the roseate, filtered rays of a photon disk.

Sini Mran, plump, pink-cheeked, en-

AST-3

ergetic, was with them. All three wore bandages. But they were washed, refreshed, comfortable.

Ken, a little reluctantly, for he had wished the place to be Teddu Len's, sat at the commandant's desk. The revolting miners had been organized into a fighting unit; Ken Darren in command, Teddu Len and Sinl Mran beneath him.

"In twelve days," repeated Teddu Len, "the fleet can be here from Nydron—and bombs falling on this building."

"The weapon you invented?" asked Ken. "Would it save us now?"

"The device, you mean, that I planned as I lay in the torture cell? It is an atomic power wave, carried upon a tight beam of subelectronic radiation, which will penetrate the dynamic space shell. It would be a powerful agency of destruction—but we cannot build it."

"Why not? We have shops, materials——"

"Each projector requires the use of a crystal of okal—without it the instantaneous generation of atomic energy is impossible."

Ken's heart sank.

"Always we need okals," he muttered. "'We can't save the planets without the great one that Dakkil Kun has. And we can't recover it for want of a small one.'"

Little Sinl Mran had let out a startled exclamation.

"We have an okal, Ken," he cried excitedly. "I saw it. It is one some prisoner found long ago. It has been kept hidden, passed from man to man. It made life here endurable; its beauty is like a refreshing drink."

"How large——"

"It is small as a grain of sand—but a grain of perfect beauty."

"Let us see it," commanded Teddu Len eagerly. "Perhaps——"

Word went out. Within a few minutes the jewel was in the old man's hand. It was a minute and perfect sphere, harder than diamond. The touch

of his skin set strange, soft fires to blazing in it, so that it burst up with a wondrous, changing, many-hued radiance.

"It will do," said Teddu Len. "I shall draw plans for the penetrator and have the parts made." Gloomily, he added: "But the thing is untried, and we are yet marooned on Kardon."

"But it gives us a fighting chance," said Ken.

His hard chin set and his level, gray eyes darkened with grim purpose.

"We can fight," returned the thin, tired old voice of Teddu Len. "But Dakkil Kun has the geodesic fleets, and the forts on Nydron. And the flame creatures are with him, with their dread science and their great black ships."

Eleven days later the fleet was sighted, descending upon the fortress. The alarm brought Ken to the top of the great building. Beyond the sheltering canopy, he came under the white and featureless sky. Streaming with tears, even behind dark lenses, his eyes peered up into the dome of pitiless heat—and found the ships.

Out of a sea of white flame, the geodesic fliers were drifting down; huge and shimmering bubbles of mirrorlike refulgence, their surfaces were nowhere broken. Nine of them he counted, floating down over the dark, age-leveled horizons of flame-seared Kardon.

The "penetrator" was close beside him, a relatively small mechanism, the minute okal lost in a mass of intricate tubes and coils. It was sheltered beneath a dome-shaped shield which also protected Teddu Len and his two assistants.

"They are coming within range," called the thin voice of the old inventor.

"Wait," called Ken. "One ship is coming ahead. Let them land it if they wish. Perhaps they want to parley."

He watched, shading his smarting eyes.

"Yes, they are, coming in. I'll go

aboard myself and offer to surrender the mines, undamaged, in return for a ship."

"No chance that they'd do that," muttered Teddu Len.

"But—somehow—we must have a ship."

The vast, silvery sphere hung for a moment, silent, motionless, above the arms of the cradle, a bubble of mirror whiteness, its fulgor blinding in the terrible light, its unmarred perfection almost unreal.

Then the dynamic space shell was gone. The dull, copper-red of the hull, broken with rivet heads, air-lock and ports, caked with greenish oxides, collapsed into the cradle.

A petty officer came off to announce, importantly:

"Lar Radnu, Admiral of the Fleet of Dakkil Kun, Lhundar of the Planets, wishes to speak with the leader of the rebels here."

With a word to Teddu Len and Sinl Mran to keep on the alert, Ken followed the officer aboard. Within the great, cylindrical chamber of the ship's air-lock, he met Lar Radnu.

Little more than a boy, yet the admiral had an erect pride that became the winged insignia on his cap, the slender neutron gun at his belt. His thin face, twisted with the livid disfigurement of that long scar, was firmly set, composed as if with a deep, enduring purpose.

He came forward quickly to take Ken's hand, his dark, somber eyes warmed by a little smile.

"I remember you," he said, in his low, even voice. "Your name is Ken Darren. You are the man from Pylos who spoke of his loyalty—love—for our lost Princess Wyndonee."

Again the break of the low voice, the brightness of tears in those dark eyes.

And again Ken felt a quick pulse of sympathy for this straight young officer. Briefly he wondered if he, also, might

not have loved Wyndonee, and with more hope than Ken. And he was puzzled again that such a man should be serving Dakkil Kun.

"I did love Wyndonee," said Ken Darren. "I should have given my life to save her—gladly. Now I am going to offer it as I think she might have wished—in the service of mankind."

"So long as I live," he went on, in a quiet, grim voice, "I am going to fight your master, Dakkil Kun. I am ready to die in the service of Teddu Len, to save the planets and humanity."

A FAINT GLEAM of surprise came into the dark eyes of Lar Radnu. His firm lips opened a little. Ken thought that his dark, composed face betrayed a slight, incredulous hope.

"If you have come to parley," Ken went on, "we can offer you this:

"The mines here are valuable. We are able to destroy them. We will surrender them to you, intact, in return for a ship and freedom to leave Kardon. But we cannot surrender the right to fight; it is more precious than our lives."

Lar Radnu seemed hardly to have heard. His sober, piercing eyes were fixed upon Ken with a singular intentness.

"Did you say"—his low voice was tensely vibrant—"that the scientist, Teddu Len, has a plan to save the planets?"

"He has," Ken told him.

"But how?" demanded Lar Radnu. "Dakkil Kun has given the beings of flame the tensors of subspace curvature. They can, whenever they will, unlock the etheric spheres and consume the planets with the flame of the Sun."

"His plan," said Ken, "is to lift the planets out beyond the surface of the Sun, to safety from the xyli and the Sun's heat."

"He could do—that?"

The young officer was rigid with incredulous wonder.

"He has devised the necessary equipment. The thing can't be done, however, without the use of a great okal, which I found, and Dakkil Kun stole from me."

"Then it could never be done," said Lar Radnu bitterly. "There is no weapon that will reach out through the dynamic space shell. The Lhundar surrendered for want of such a weapon, because he could not save his people from the heat bombs of the xyli."

"Again it would be the same. Dakkil Kun and his dread allies would destroy us before the equipment could be made and the planets moved."

"But there is a weapon," protested Ken. "Teddu Len's penetrator. It is untried. But he says it would destroy this ship in an instant."

Ken Darren was surprised at the next action of the admiral.

Quietly, with a grave, unostentatious dignity, the slender young officer removed his cap with its white-winged insignia, stripped off his belted neutron gun, and knelt to present the two to Ken.

"What," asked Ken, "does this mean?"

"The penetrator," said the young admiral gravely, "has conquered the fleet of the Lhundar, Dakkil Kun. I now surrender the fleet to you. If you wish to return my insignia, I shall be glad to remain in command, under your orders."

Sudden tears glittered in his dark eyes. "I shall be glad to serve under you in the defense of humanity against Dakkil Kun and the creatures of flame."

Ken's throat was aching suddenly, and his lips were quivering and stiff, so that he could not reply. Silently, he returned the weapon and the cap, gripped the firm hand of Lar Radnu.

"I have been taking the orders of Dakkil Kun," said Lar Radnu, in a shaken voice, "because there was no alternative, no opportunity to fight. I

might have killed myself, as did the late Lhundar, but for some mad hope——" His voice broke.

"Until this moment," said Ken, when he could speak, "all our plans seemed folly. Now we have a chance to win."

"Yet it is a slender chance," reminded Lar Radnu. "Dakkil Kun still guards the great okal in the fortresses of Nydron. The black ships of the flame creatures are still at his command. And the xyli have still the power, whenever they will, to flood all the planets with heat."

"For all we have done and all we can do, mankind may perish yet, like midges in a furnace."

VI.

THE MASS of the fortress fell away. It became a white polygon against the dark waste of Kardon's burned, lifeless landscape. Against the white flame of the pitiless sky, nine geodesic ships floated upward, enveloped in the argent, shimmering bubbles of their dynamic space shells.

"A black ship!" The warning electrified the fleet. "A spy!"

But the briefly glimpsed flier of the xyli was gone when the fleet slipped through the eon-weakened, gradually collapsing etheric sphere in which Kardon had been born and came again into the solar photosphere.

An unreal globe of burning silver, the prison planet fell away behind. The fleet swept onward through the Sun—through a featureless void of golden flame, measured in millions of miles. Through a sea of fire, torn by the terrific scarlet storms of Sun-spots, broken only by the minute islands of the planets, it drove toward Nydron.

Days went by. The mother planet swam at last into view—a white spark wrapped in xanthic flame. It grew to be a gigantic globe of polished silver. Then the ultrawave operator brought

Ken Darren a message that ended all hope of surprising Dakkil Kun.

To Ken Darren, slave, and the vermin with him:

My greetings, and make yourselves ready to die. For your rebellion and the treason of Lar Radnu have been anticipated, and the xyli, my loyal allies, are prepared to defend the planets they have purchased and paid for.

Dakkil Kun, Lhundar of the Planets.

Another hour, and the black ships followed.

Standing in the long control room, Ken Darren was watching one of the great vision disks. An abyss of hot, golden radiance filled it—the illimitable fiery sea of the Sun. Nydron, within the silvery splendor of her protecting etheric sphere, hung like a white bubble in that gulf of flame.

Out of that bubble came the ships of the xyli.

They were black specks, scores of them. They grew into the arrows of slender, tapering vessels. Their glinting, dark sides were marked with rows of ports. At the sharp stern of each flickered the hot violet of its propulsion disk. They were gigantic, and they moved with the grace and the swiftness of a strange, incredible power.

Watching them, Ken drew in his breath with awe-struck, unwilling admiration.

"They are beautiful," he whispered, "and dreadful. Like the patterned serpents of the hills of Pylos. And the builders of them are to be the masters of the planets when mankind is dead."

Then a faint and misty cone of light reached out from the bow of one black ship. The color of it was a deep orange, verging upon redness. It fastened upon one geodesic flier, the *Explorer*. The attacked ship veered back and forth a little. But its movements were clumsy; it quickly became helpless.

The cone seemed to thicken; it darkened, curdled. And the silvery en-

velope of the dynamic space shell abruptly vanished from the *Explorer*.

Its naked, riveted hull was at first starkly black against the golden flame of the Sun. But it began to glow quickly and increasingly red, heated by the terrific radiation. Abruptly it sagged off its course and fell toward the fiery core of the Sun.

In a frantic voice, Ken spoke into the tube which connected with Teddu Len. The old scientist was with his penetrator which had been installed in a turret in the hull.

"Teddu!" he cried. "Do you see the *Explorer*? It is falling."

A thinned, metallic rasp—the old man's voice—came back from a vibrating diaphragm:

"Yes, Ken, I see. The orange ray breaks up the space shell with the interference of a heterodyning field. Power of propulsion is lost with the tripolar field, and the ship is shielded no longer from the solar gravitation——"

Maddened by the detached, scientific calm of the old man's voice, Ken broke in: "Can't you do something? The heat will be through her hull in moments——"

Horror choked off his voice as he watched the falling flier. The orange cone had swung down to follow its plunging flight. Its doomed hull was a vivid, canary yellow, now. He shuddered, picturing the oven within it, its crew shrieking, dying, roasting.

"No, I can't save it," rasped the old voice from the diaphragm.

And beneath its calm, Ken now sensed the agony of sympathy; he realized that the scientist, for all his cool self-control, was suffering with those tortured men.

"I had not anticipated that they could strike so quickly—so dreadfully," said that dull voice of pain. "The penetrator wasn't ready. The deflector fields are building up now, with the subelectronic wave. The atomic power is so

intense that no metal can withstand it. It must be generated and directed past the dynamic shell by curves in space itself. The subelectronic wave creates a tube field through hyperspace——"

The words ended in a sob of pain.

Ken was watching the *Explorer*. Her hull was blue-white now, and swiftly dwindling far below, as it hurtled down into the Sun's intolerable abyss. The orange ray suddenly left it, flickered out. And the doomed flier flattened, collapsed, and melted into a brief flare of colored flame.

An instant, and no trace remained of the ship within the xanthic void.

"The deflector fields are generated," rasped the voice of Teddu Len. "In a moment—now——"

AS that quiet, deadly word whispered from the speaker, Ken looked back into the golden disk of the screen. His eye caught the briefest flash, as if a needle-thin, white blade had darted from the *Victory*, his own ship, toward the long, black cylinder of the murderer.

Immediately, where that instantly vanishing white needle had touched, the black hull glowed with intolerable whiteness. A disk of white radiance spread, inconceivably hotter than the golden flame of the Sun. The black hull, crushed by terrific forces, its fragments fusing, crumpling, was swallowed in that expanding brightness.

The white glow slowly faded against the golden gulf. And when it was gone, no trace remained of the black vessel, marvelously refractory to heat though the alloys of its hull had been.

While that whiteness still flamed, the calm voice of Teddu Len spoke again:

"The penetrator is successful. The effect exceeds my expectations. It is equivalent to the instantaneous atomic disruption of half a pound of copper within the enemy hull. The accumulators can be charged and discharged

every fourteen seconds, so long as our supply of copper lasts."

His voice was still vibrating from the diaphragm when that white, blinding needle of light stabbed briefly out again, and another black arrow was converted into an orb of white flame.

"Now," the thin voice rasped again, "they will attack the *Victory*. They must realize that we carry the only weapon."

True, from the four nearest of the black ships, the misty, expanding cones of orange radiance reached out. Their meshing funnels caught the *Victory*. Each of them thickened toward redness.

Instantly, above Ken, the vision screens blazed with white light, and then went black. He knew that the shielding space shell was already gone, that it was the full impact of the Sun's radiation which had burned out the amplifiers.

Warning lights sprang out, many-colored, in the sudden darkness. Alarm gongs clanged. The tortured ship was protesting the consuming breath of the Sun against her naked hull. She was blind, disabled.

Ken felt the ship veer and plunge, as a voice quavered out of the dark, thin with terror: "The drive field is gone! We're falling after the *Explorer*."

Teddu Len, in his exposed turret, would be helpless, first to perish.

From somewhere came a thick, sobbing scream: "The heat—heat—killing me!"

Ken Darren staggered blunderingly forward through the confusing darkness, then stopped himself, trembling. This, he knew, must be the end. Oddly, it mattered little that it was the end of himself. It was the end of the plan to save the planets, that was what counted. It was the end of mankind.

He stood there in the dark, helpless, momentarily expecting the hot breath of death. His personal regrets were two:

He was sorry that he should never again know the beauty of the great okal. And he regretted the murdered loveliness of the lost Wyndonee.

Then out of the darkness came the rasp of Teddu Len's voice:

"That is the fourth. Restore the space shell before the hull is too hot. Fortunately, I had set up a secondary shell to shield my turret. That kept them from blinding me or interfering with the penetrator."

Men were suddenly busy in the darkness; panic became efficient order. The vision screens flashed back into radiance. And Ken knew that death was put away again.

Above the argent bubble of Nydron still hung the black arrows—most of them. But the nearest five now, were merely fading disks of white flame. As he looked, another was consumed.

"That," said Teddu Len, "should be enough."

And Ken saw, in a moment, that the black arrows were wheeling, retreating. Two more were caught as they fled away into the higher levels of the photosphere, toward the weird, colossal flying cities of the xyli.

The eight surviving geodesic fliers drove on, presently, toward the silvery envelope of Nydron.

"Without the xyli, Dakkil Kun is doomed," Ken Darren told Teddu Len, drunk with the elation of victory. "The people will surely rise to aid us. When Dakkil Kun is crushed, and the okal recovered, every man will work to help build the field units for the planets. We'll have them driving up out of the Sun before a hundred days have gone.

"And Dakkil Kun," he muttered grimly, "will pay for what he did to Wyndonee."

Teddu Len, standing over his penetrator, rubbed his lean chin, doubtfully.

"The xyli retreated," he said slowly. "But they aren't conquered. They might have destroyed us in a concerted

attack. They simply chose to wait. They must still desire the planets, with their safety from the solar storms.

"No," he repeated, "we shall meet the flame creatures again. Nor, I suspect," he added, "has Dakkil Kun shot his last bolt."

His gloomy predictions were justified, a day later, when the eight ships descended into their cradles upon the great field by Kothri.

No attempt had been made to oppose the landing. Teddu Len's long vigil by the penetrator had been needless. When the *Victory's* air-lock opened, Ken hastened out to meet a group of officers on the field.

THAT MOMENT, when he should set foot on Nydron, was one that long had lived before him. He was elated with victory, proud of the fleet and the hardy men behind him.

The sky of Nydron was a pale dome of silver; the cool air refreshed him with the tonic of eternal spring. Ken stood for a moment, filling his lungs joyously and looking across the great field where the Titanic reddish globes of geodesic fliers lay motionless in their cradles.

Beyond the field he could see the towers of Kothri—slender, fluted columns of argent, resting upon broad, truncated pyramids that were terraced with greenery and vivid bloom. Tears started into his eyes; the tension of emotion closed over his chest. Always he had desired to come to Kothri, so.

A shadow darkened his face, then, and bitterness lined it. And he shuddered with the sudden agony gnawing in his breast. For the slender, blue-eyed loveliness of Wyndonee had come back to him, and the soft huskiness of her voice had whispered at his ear.

And he knew, abruptly, that he had wished to come to Kothri because it was her home. And all his elation

turned to corrosive bitterness because her loveliness was dead.

He stood there, lost in pain. And bleak centuries seemed to flow past him. Despair sank its cold fingers into his throat. Then he flung his head, seeking to recover himself, and strode forward to meet the group of eager, welcoming officials.

"I am Marron Blen, Underlord of Kothri," began one portly personage. He was gaudy in colored silks; his voice had an oily thickness. "On behalf of my city, I thank you for repelling the fleets of the xyli, and for ridding us of our oppressor, the tyrant Dakkil Kun who——"

"Where is Dakkil Kun?" Ken's sharp question cut in.

"Dakkil Kun is gone," said Marron Blen, a little affronted at the interruption. "The dictator has fled."

"Fled?" rapped Ken. "Where?"

"A private geodesic flier had been built for him in the yards here," said the official. "The largest ever built. It is armed with the weapons of the xyli. It carries supplies enough to last generations. Everything——"

"He has escaped?" Ken again interrupted. "In that?"

"He has gone. All was ready. When you defeated his allies in the battle beyond the etheric sphere, the tyrant knew that all was lost. He went aboard with the criminal gang he brought from the prison planet, with their slaves and women——"

"Where did he go?"

"Who knows?" Marron Blen shrugged, obviously displeased at Ken's incisive manner. "At full power, they drove out through the etheric sphere. They were moving in the direction of the cities of the xyli, above."

Ken looked back toward the looming, rugged, copper-red hull of the *Victory*.

"We must pursue—if it isn't already too late."

"But why?" demanded the piqued official. "You have delivered us. We are well rid of Dakkil Kun."

"He has a jewel of okal," Ken explained swiftly. "We must take it back from him. If we fail to recover it, it means the death of every planet, by fire."

"Nonsense!" puffed the portly Marron Blen. "The xyli wanted the planets for themselves—but they are defeated. You routed their black fleet. We are safe."

"Safe?" echoed Ken. "Look at the sky."

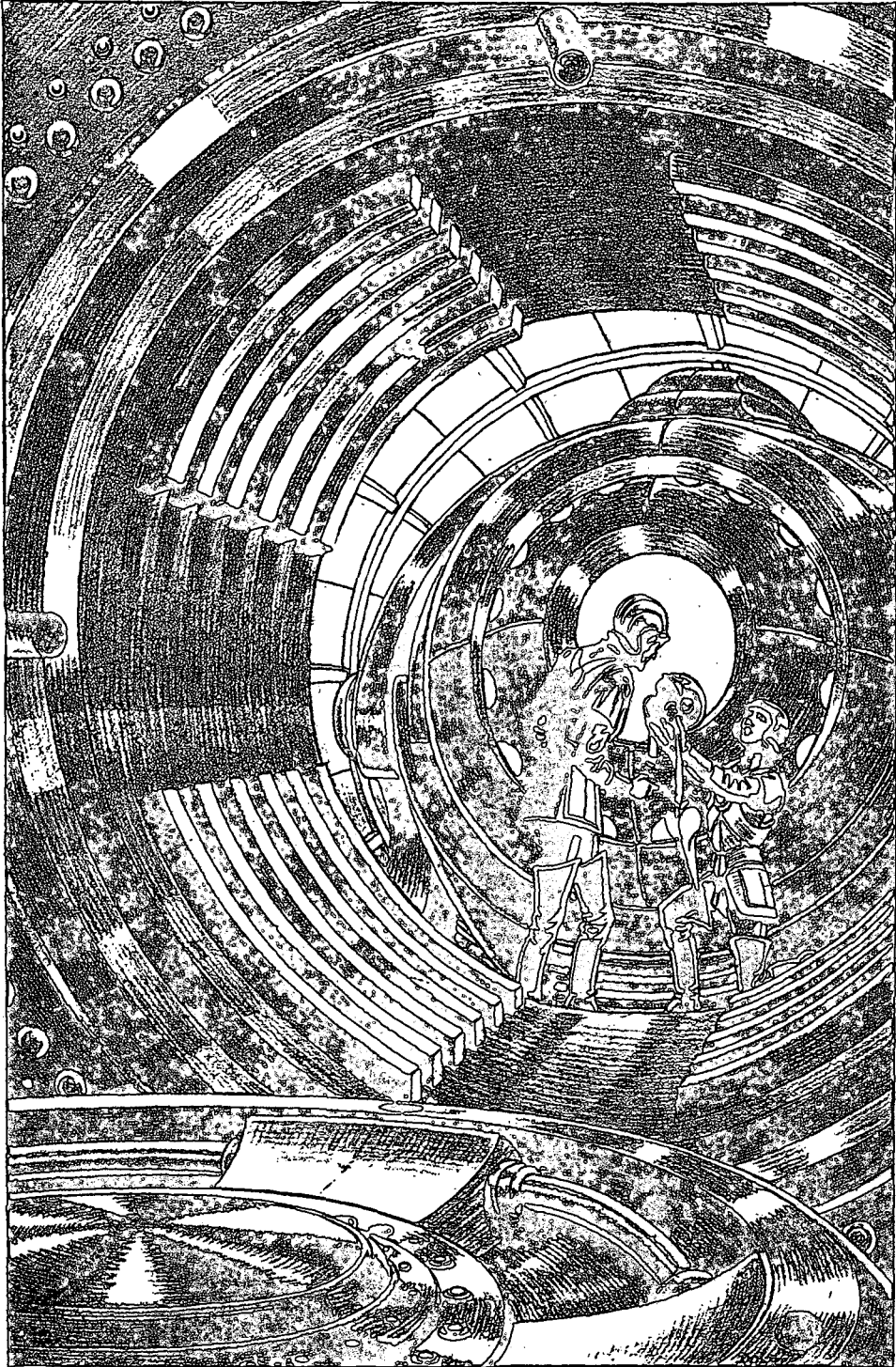
His keen eyes had noted the flicker. The pallid, silver sky had become brighter, at first imperceptibly, but ever more swiftly. White flame flushed it, growing more intense. Ken fancied a sudden, new heat in the air against his cheek.

"What is this?" muttered Marron Blen. The red of annoyance was fading from his thick jowls. His pasty face became a sickly white. Weakly, he stammered: "The sky! It's blinding! What does this mean?"

"Dakkil Kun sold the planets to the flame creatures," Ken briefly reminded him. "According to the bargain, they were not to claim them until Dakkil Kun was dead. But now that he has run off upon the ship where he must mean to spend the rest of his life, they have already turned their rays upon the etheric sphere. And now that the etheric sphere has been weakened, it can never be restored."

"You see the flame in the sky. It will remain there, until all life is swept from Nydron. Until every tree and shrub, every clump of grass, every building of man, bursts into flame. It will blaze until the dead continents are black deserts, and the seas dried to wastes of salt. Until the mountains begin to fuse and run down in rivers of lava."

"And when it is hot enough, the flame



"We must lose Lar Radnu and bring back to Kothri the lost Wyndonee."

creatures will bring their cities here, for safety from the storms of the Sun."

"Impossible," whispered the fat man. Gazing blankly into the new, hot whiteness of the sky, he mopped sweat from his flaccid face. Incredulously, he shook the puffy ball of his head. "That cannot be. You're a madman."

"No," Ken Darren told him, grimly, "Dakkil Kun is the madman. And his madness has destroyed the human race."

VII.

BACK within the air-lock, Ken Darren met the alert young admiral, Lar Radnu, and thin, old Teddu Len. Their grave, anxious faces told him that they knew.

"The heat has come," he said.

The old scientist nodded wearily. "The okal?" he asked.

"Dakkil Kun has fled, in a new ship. He must have taken it." And Ken asked, anxiously: "Is there time, still—to save the planets?"

"Possibly," said the old man, slowly. "By conscripting every man, every machine, every resource."

"But we must have the okal," he added. "Nothing can save a single planet, unless it is recovered. There are others, but all of them together would not yield power enough to lift the smallest planet."

"Then we'll get it," said Ken, grimly. "Even if we have to follow Dakkil Kun all the way to the flying cities of the flame beings."

He looked at trim, slender Lar Radnu. The dark eyes of the young admiral flashed in reply to his glance. The composure of his scar-disfigured face was twisted by a quiet little smile.

"We will," said Lar Radnu, gravely. His artistically small hand gripped Ken's, warmly.

"We can try," said Teddu Len. "But remember—we haven't met the full strength of the xyli. When we met

their fleet, they retired to prevent further losses. But they must have far greater weapons to defend their cities. We couldn't hope to enter them, and live. We can only hope to overtake Dakkil Kun before he finds refuge there."

"And his new ship," whispered Lar Radnu, soberly, "must be as fast as the *Victory*."

"We must recover the okal, somehow," replied Ken. "Let's go."

The air-lock was soon sealed, the dynamic space shell snapped about the hull. And the great field dropped away, until the huge ships lying there looked small as eggs in a nest. The emerald terraces and white towers of Kothri dwindled to a neat, checkered pattern. The planet's etheric envelope, blazing with white radiance, flickered behind.

The *Victory* leaped upward again, through the golden flame of the photosphere. The sphere of white Nydron dropped away beneath it; it became an unreal silvery ghost; it was swallowed in xanthic fire-mist.

An anxious day dragged away.

Searching the golden void that filled the vision panel, using the utmost penetration and magnification of the amplification circuits, Ken at last discovered the fugitive flier. It was a minute pin point of silver, thickly veiled in the glowing mists.

Hour upon hour he manipulated the controls to hold it upon the screen while the *Victory* drove on toward it at her utmost speed. Again and again he lost it in some thickening of the xanthic haze; it never appeared nearer.

"Their speed is at least as great as ours," he reported to Teddu Len. "And I think they know we are following. We'll never overtake them before they find safety in the flying cities of the xyli."

He stood in the little armored turret in the hull, staring dejectedly down at the stooped figure of the old scientist.

who was busy with the intricate mechanism of his penetrator.

"There is something," replied Teddu Len, speaking absently, without looking up, "that I can try. An adaptation of the tube-field set up through hyperspace by my subelectronic wave. I can penetrate their dynamic space shell, tap the tripolar field that drives them—"

His voice trailed away as his fingers completed some adjustment, and his mind found a new problem. And presently his strange tubes glowed again; and the tiny *okal* flamed with the pure light of a star. A rustling whisper filled the small turret.

In the vision screen, a pale finger of greenish light was visible. Reaching out from the *Victory*, it seemed to dissolve in the golden void. Watching the white mote of the fleeing ship, Ken saw it pause in its flight.

"You have stopped them!" he called eagerly. "How?"

"I'm draining away the energy of their drive field. With the full power at my command, I could send them plunging toward destruction in the core of the Sun."

THE *Victory* bore down upon the helpless fugitive. It was a ball of silver, swung in the gulf of golden flame. Far above it, beyond it, were dark shadows, odd cloudy masses floating high in the void.

"Those shadows," said Lar Radnu, "are the cities of the *xyli*—their strange flying dwellings, built of the same black alloys as their ships. If Dakkil Kun had reached them, he might have found safety."

Ken dispatched a message upon the ultrawave signal ray to the other flier:

Dakkil Kun: We demand that you surrender the great *okal*. Allow us to approach and expand our space shell to inclose both fliers, so that we may take it aboard through joined air-locks. Do so, and you may go free.

Then came the taunting reply:

Ken Darren, slave: If you want the *okal*, find it. If you still desire Princess Wyndonee, know that you shall soon be with her—in death! And know that my allies, the *xyli*, can defend what is theirs.

Ken dispatched an immediate answer:

You are at our mercy. You cannot escape. We have a weapon which would obliterate your ship in an instant. Surrender the jewel and save your lives.

The reply to this was a cone of misty orange radiance—the ray reaching out to strip away the shield of the *Victory's* space shell, exposing her hull to the heat of the Sun.

A white blade of flame flickered out from the penetrator, probed the silvery bubble of the other flier. And the orange cone ceased to exist.

"A judiciously adjusted discharge," commented Teddu Len. "It must have fused the piece of apparatus completely."

A few minutes later another message came over the ultrawave. Even in the cold words, Ken could sense the mad, consuming hatred that had wrung all the warm blood of humanity out of Dakkil Kun, had left but a grim destroyer.

We are helpless. Yet you are at our mercy. I cannot escape; I cannot fight. But I can die—as you will die, and the rest of your vermin called men. If you think the great *okal* would save you—find it.

Even as Ken looked up from the message to the golden disk of the screen, he saw the bright sphere of the space shell flicker away from the other flier.

Its naked hull plunged downward through the yellow abyss. At first it was starkly black; in a moment it was glowing cherry-red. Beneath the terrific acceleration of solar gravitation, it

was hurtling toward the unendurable heart of the Sun.

For a moment Kén staggered, numbed, shaken with horror at this last, suicidal gesture of hatred.

Then he sprang toward Lar Radnu.

"Put the *Victory* beside it," he shouted. "Expand our dynamic shell to inclose both ships. We'll storm their air-lock and search for the okal."

"The shell will be weakened by the expansion," objected Lar Radnu. "Our field can't support both ships. The *Victory* will fall with them. There will be increasing leakage of radiation. The time will be short—and we in danger of perishing with them."

"We must try," said Ken.

But Lar Radnu already was giving swiftly-voiced commands.

Air-lock was sealed against air-lock, within the space shell weakened by expansion. As both ships continued to plunge into the core of the Sun, their hulls heating under the radiation leaking through, neutron blasts cut a way through the metal valve.

Ghastly silence greeted Ken as he led a party aboard to search for the great okal. The doomed crew had not waited to die in the collapse of their fusing vessel. Dead men and women stared at the intruders, some still clutching the weapons with which they had destroyed themselves.

High in the silent hulk, however, Ken heard a wail of music. It led him into a magnificent, barbarically splendid chamber, gaudily rich with jeweled tapestries. Pallid, rosy light streamed down through cool, perfumed air.

In the middle of the room was a long table, set with glittering crystal and polished metal, burdened with elaborate pastries and vivid-hued fruits and tall flacons of wine. Two score men and women sat at that silent board, glittering in the plundered wealth of Kothri, gorgeously jeweled and gowned and painted.

Dakkil Kun sat at the middle of the table, and of the forty, only he was living. Upon either hand was a woman who had been beautiful, already rigid and glassy-eyed in death. He rose when Ken entered the room, in his thick, hairy hand an emerald cup of pale wine.

Ken had not seen him since that day upon Pylos when they had killed the tiger in the cavern and Ken had found the great okal. But still he looked the same: a squat and massive giant, blue-black of hair, his swarthy skin bulging with thick muscles. His eyes, dark and quick and small as always, held a feral wildness. His heavy, cruel-lipped face bore a slow and leering grin, stamped with the cunning of insanity.

He stood there, smiling queerly at Ken. One thick, dark hand rested insolently upon the cold, marble shoulder of the corpse at his left; with a mocking gesture, the other held high the emerald cup.

"Welcome, Ken Darren, my old companion," he said thickly.

His voice was the voice of a man very drunk—not with wine only, but with mad passion and consuming, triumphant hate.

"You are late for my final feast," he said. "But come and sit with me—in the arms of my lovely companion."

And he waved the green cup unsteadily, toward the dead woman at his right.

"Sit and drink. The wine is poisoned. But this is the time, of all times, to drink poisoned wine."

KEN was trembling, sick with the horror of this mad tableau. But he forced himself to step forward, to speak persuasively:

"Dakkil, please listen to me! If you care nothing for mankind, listen for the sake of our old friendship."

"Of course you are my friend, Ken,"

came the thick, drunken voice. "Come and drink."

"Listen, Dakkil," pleaded Ken, fighting down his revulsion. "Give me the great okal. With that, we can lift the planets out of the Sun—to safety."

Dakkil Kun shook his heavy head, slowly, so that it lolled alarmingly.

"The planets aren't yours," he said thickly. "I sold them to the xyli—for this."

He gestured clumsily with the emerald cup, down the long and richly laden table, at the stiff, ghastly-eyed company of gayly clad dead, at the jeweled tapestries beyond.

"They gave me all that I desired when I was a lonely slave on Pylos," he said. "And I am content. I will not cheat them."

"You won't give up the jewel?" asked Ken, in despair.

"If you want it, find it." He chuckled thickly. "But you must hasten. It is already growing hot—I must leave you."

He drained the emerald cup.

Ken leaped forward, seized his heavy shoulder, spun him away from the table of corpses.

"Tell me," he gasped urgently, "tell me—"

He had meant to demand the okal, but it was another question that rasped out: "What became of Wyndonee?"

"Find out—"

The mocking whisper was strangled. The heavy body jerked convulsively from his hands and lurched to the table of the dead.

Struggling to subdue his horror and despair, Ken was vainly searching for the great okal behind the gemmed tapestries, when the urgent voice of stout little Sinl Mran spoke into the silent room of death:

"We must go, Ken. Lar Radnu sends word that the expanded space shell will endure no longer."

"No use to go," muttered Ken hopelessly, "without the jewel."

And he kept up his desperate, aimless search, stifling in air increasingly hot, until Sinl Mran and another dragged him back through the wrecked air-lock.

The doomed hull was released. It fell away from the *Victory*, into the inferno of the Sun's heart. While the *Victory* fought for her life, Ken stood, listless, limp with hopeless despair, watching the wreck. Dwindling as it plunged away, it changed from orange-red to yellow; it became blue-white. It flowed, flattened. A swirl of flaming vapor, it was lost in the golden chasm.

All it contained, even the refractory crystal of okal, Ken knew, was now reduced to elemental atoms. And even those atoms were half stripped of orbital electrons in the terrific furnace of the Sun.

And Ken's hopes were lost with the okal, and the hopes of the human race.

VIII.

GLUM, silent despair rode the *Victory* as she drove back toward doomed Nydron.

Wearily, hopelessly, Ken paced the long control room. His eyes were red from lack of sleep, his face drawn and haggard. His shoulders stooped from the burden of a task that had been too heavy. And he had smiled a little, bitterly, to see a few gray hairs in his temple.

"I should have drunk the poisoned wine," he muttered, once.

Yet fits of wild, irrational hope still seized him.

"Without the okal," once he asked Teddu Len, "there's no chance?"

"None." The heartless old scientist shook his lean, gray head. "The thousand generations of our science have failed to liberate atomic power without the aid of the okal."

"It wouldn't be possible to make one?"

"No. Experiments in that direction were abandoned after a hundred generations. Okals, you-know, are not allotrope of carbon. We believe they were formed when the planets were given birth, deep in the Sun's core. Then, under unthinkable pressures and temperatures, and in a warped space we could never duplicate in the laboratory, matter burst out of the universe, and was instantly chilled, by expansion, in its new subspace. No, only a new, giant Sun can make an okal.

"Nor is there any thinkable possibility that another, large enough, will be discovered. Yours is the only one ever found that would have been of any use.

"A superstitious man," he mused, "might believe that yours was created for our needs, and then taken away as a punishment for the social injustice that made Dakkil Kun into the inhuman monster that he was.

"Anyhow," he finished, his old voice low with bitter, despairing finality, "the okal is gone. And with it, our hope."

The *Victory* descended once more beside the towers of Kothri.

Leaving the ship, Ken was appalled at the havoc a few days had wrought. The sky, once pale, cool silver, was now an eternal dome of pitiless, white flame. The air stung the nostrils with hot dust. The terraces of Kothri, once so green, were sere and black from heat.

Rain had ceased to fall, he learned. Rivers were failing already, lakes shrinking. Dust everywhere, carried on searing winds, blighted woodland and field.

Terrible, upon the people he saw, was the shadow of death. Every face was lined and gaunt. Eyes were inflamed from the frightful glare, skins blistered by the merciless radiation. And every face was hideous with the stamp of doom, twisted with devouring fear, mad

with that ultimate insanity that conquers when hope is dead.

No planet, he learned, had escaped. Even ringed Synthrar, and colossal, far-distant Bellydron, had reported by ultrawave from their scattered colonies that the skies had turned to white flame, that cataclysm of fire was at hand.

Pain of grief and despair pulsed in Ken's throat as he returned to the *Victory*. Tears smarted in his inflamed eyes; his gaunt body was racked with dry, ungovernable sobs.

"Always," he gasped bitterly to Teddu Len, in the control room, "I have wanted to come to Kothri. Always its slender, white towers and its bright, hanging gardens have been a promise to me. I have seen it every moment, in my mind, and Wyndonee there.

"Dakkil Kun destroyed her. And Kothri now is burned and doomed. Wyndonee and Kothri——"

His lips stiffened, and the agony pulsating in his throat cut off his speech. He turned silently away from the old man, his lean body jerking with voiceless sobs.

"There is little disorder, yet," said Teddu Len, presently, speaking with the calm of a scientist. "Men are dazed, still. When the reaction comes, civilization will be gone in a day."

Ken listened silently. His sobbing had ceased. His emotion had burned itself out and burned the heart out of him, leaving only a stiff automaton.

"Rioting, pillage, arson," Teddu Len went on dully, "murder, outrage, suicide—madness will pile them on us, before the end. And the end itself will be soon. Life will not be possible in the open air beyond a hundred days, I think. In air-conditioned buildings, a few may live another hundred.

"Still," he added, "there might be time—if we had the okal. The common task, the common hope, would hold civilization together."

"I had a search made at the palace,"

Ken told him, in a dry, listless tone. "After all, we don't know that he took the jewel aboard with him, though he must have done so. But it was no use. None of the servants or guards had seen the jewel—none had so much as heard of it——"

He stopped, quivering, electrified. He gasped, and one arm thrust stiffly out. For a moment he stood rigid, then eager life flowed back into his exhausted frame.

To Lar Radnu, entering the control room, he shouted: "Prepare the *Victory* for a flight to Pylos, immediately."

To Teddu Len, he said: "Get off, with your plans. Set every man and every machine to work, building your field units. I am going after the okal."

"What?" gasped the old man. "Where——"

But Ken, in frantic haste, was already pushing him out of the room.

The *Victory* came down upon Pylos.

FOLLOWING the directions of Ken, Lar Radnu dropped it into a little, sandy glade. He snapped off the dynamic space shell and the great reddish hull settled heavily, but unharmed, against the surface.

"All my boyhood was spent in these hills," Ken told him. "Dakkil Kun and I often drove our herds across this very spot. The cavern opens from that little canyon, below. Let's go."

The two hastened from the air-lock into the hot atmosphere of Pylos. Ken's shoulders were erect now. And the slender young admiral had caught his confidence; his scar-twisted, thin face was alight with courage.

Pylos had changed. Its silver sky had become an inverted bowl of incandescence; its air was the scorching breath of conflagration; its vegetation was already sere and dead with the winter of heat. The hot desolation fell like a crushing hand on Ken's spirit.

"Folly brought me up here," he muttered gloomily. "What I hoped—could not be."

Panting and sweating in the dusty heat, eyes smarting from the unending savagery of the glaring sky, they toiled across a little rounded plateau and scrambled down into the narrow crevice of the canyon, where sultry heat was like a searing fluid.

"Once ferns grew here," gasped Ken. "The heat has destroyed them." He pointed at the dark slit of an opening. "The cavern they hid."

Lighting their way with the greenish rays of hand photon disks, they entered the grateful cool of the cave, feet splashing in the diminishing trickle of the stream.

Ken stumbled against the bleached roundness of an animal's skull.

"We killed the tiger here," he said. "The chamber of the okal is beyond."

Stooping to creep through the narrow passage, they came at last into the oval glory of the inner chamber. The green of their photon lights reverberated in many matchless hues from its crystalline walls. It burned in milk-white opalescence upon the clean sand of the floor, where the spring welled up.

Again, from a cause that he could never explain, Ken felt the puzzling emotion that had overwhelmed him on his first entrance to the cavern—a stimulating elation, a sense of intoxicating joy and satisfaction.

For a moment he stood, surrendered to that flood of unidentifiable exaltation, his eyes closed, his breath swift, his heart leaping in his chest. He reached out and caught the firm hand of Lar Radnu, instinctively driven to share that supernal instant.

Then the urgencies of the moment restored his purpose.

"The okal is here," he whispered. "It must be."

He fell upon his knees, delving in the white, wet sand.

"How do you know?" asked Lar Radnu, with a curious softness in his voice.

"Dakkil Kun, so far as I can learn, never showed the okal to any man," said Ken. "He never spoke of it. He certainly didn't use it in his rise to power.

"Then there is no reason to think he took it away from Pylos. And, I see now, it would have been unwise of him to take it when he left, perhaps impossible. It is too large to be concealed easily. And the company police were always alert for such things."

His voice grew slow as his mind went back to his task.

"I think he must have hidden the jewel on Pylos. And what spot could be safer than this hidden cavern in which it had rested undisturbed from the dawn of time? Finally, remember his repeated challenge: 'If you want the okal, find it——'"

His words ceased with a breathless, triumphant outcry. His hand had encountered the smooth round of a hard surface beneath the wet sand—a surface which had a thrillingly familiar feel, oddly soaplike, cool.

He bent low and lifted in both joyously trembling hands the peerless sphere of the great okal. Its heavy, perfect globe was larger than his two fists. The contact of his flesh gave birth to splendid flame within it, quivering, pulsating with polychromatic life.

For a little time the two bent over it, breathless, silent.

Their gaze plumbed its fathomless depths of pellucid wonder; their spirits were laved in its living tides of pure color. The shafts of its incredible radiance lifted them together to heights of ultimate joy that they had never known.

Then Lar Radnu whispered, softly: "The planets can be saved."

Ken Darren began to speak, in a low, hesitant tone.

"I am somehow sorry to leave this

cave," he said. "A queer dread—I can't say why. I am glad for humanity, because we have the jewel. Yet I think I can never be truly happy."

"Why: not?" asked Lar Radnu, softly.

"I think I told you once," said Ken slowly. "Once I saw Wyndonee upon a visigraph screen. I suppose I am a fool—but since that day I have loved her.

"I wanted to go to Kothri, in the hope that I might get a glimpse of her. I never dared to think of more than that, until the day I found the okal. Somehow, that gave me a new courage—it made me dream that Wyndonee might be mine.

"But Dakkil Kun took the jewel from me—the jewel, and Wyndonee."

His voice fell away into a chasm of black regret. After a little time of silence, Lar Radnu began to speak slowly, in a soft, husky tone that was new to Ken.

"KEN DARREN," he said, "I have come to know you well. For many days there has been a thing I wanted to reveal to you, and could not, because of the hideous pressure of doom."

"Something," demanded Ken, eagerly, "something about Wyndonee?"

Lar Radnu nodded, smiling.

"She—she's still—alive?"

"She is. She escaped Dakkil Kun."

"But how?" whispered Ken, his joy half incredulous. "And where is she now?"

"Wyndonee," said Lar Radnu, "never liked living at the court in Kothri. Ceremony bored her. She disliked the nobles who made love to her; they were greedy parasites upon society, insincere flatterers, emasculated by soft living.

"Wyndonee wanted to taste life of a different kind, simpler, more useful. She made a plan, and at last brought her father, the Lhundar, to approve it. Skilled persons arranged a disguise for

AST—3

her—a disguise as a man. For a long time she wore it, practicing masculine intonations of voice, masculine tricks of manner and posture.

"At last, when her masquerade was perfect, she went aboard one of the Lhundar's geodesic fliers. As a common-cadet, at first, she sailed out from Nydron, into the golden flame of the Sun. She liked the new, elemental life that carried her to many planets. She studied the intricate sciences of geodesic navigation. She rose to be a petty officer, then captain of a flier.

"She had a part in balking the first revolt of Dakkil Kun, and for that part, was made admiral of the fleet. In the second revolt, she aided her father in the hopeless attempt to defend Nydron against the black ships of the xyli, and surrendered with him to Dakkil Kun.

"But Dakkil Kun, never penetrating the disguise, was unable to find Wyndonee, though he searched all Nydron. For want of trained men of his own, he left her in command of the fleet—where she aided in the search for herself. Softly, Lar Radnu laughed.

"And, Ken Darren," the husky voice concluded, "you know the rest."

"Wyndonee," asked Ken, faint with incredulous joy, "became Lar Radnu?"

"She did," came the whisper.

"You—you are Wyndonee?"

"I am," assented the admiral.

The low voice had become completely feminine. Its cool huskiness touched an old memory in Ken; it resounded through his heart. And the military stiffness of the slender young officer dissolved into the yielding, gracious curves of womanhood, as Ken's trembling arms were held out.

And the great okal, forgotten, burned in solitary and transcendent splendor upon the smooth sand that floored the oval chamber.

When they left the oval chamber, willingly now, joyously, and hand in hand, but one thing troubled Ken.

"The scar?" he asked.

"Oh!"

And his ears rejoiced to the delicious tinkle of Wyndonee's laugh, a sound he had long yearned for, bitterly, and despaired of hearing ever again.

"The scar will peel away," she promised him. "It is a kind of adhesive film which draws the skin, painted. If you wish to see me without it——"

"I do."

"Then we must lose Lar Radnu, and you shall bring back to Kothri the lost Wyndonee."

Sight of the great okal, in Kothri, ushered eager youth back into the weary eyes of Teddu Len.

"It will do?" Ken asked him, anxiously.

"It will!"

And the scientist was an old man no longer. His shoulders were straight; his face bright, the seams of years wiped from it miraculously.

"It is a perfect thing," he whispered. "It is larger than I had dreamed possible. Its beauty will be the greatest treasure of mankind. To look into it, only, is reward enough for a life of pain."

"And it will save the planets?" asked Wyndonee.

WYNDONEE, standing beside Ken Darren, was restored now to the beauty of his dreams. The dark pigment was gone from her radiant skin; the long scar had vanished; the admiral's trim uniform had been exchanged for a blue, shimmering gown that accentuated every rich curve of her.

The scientist's reply kindled new radiance in the blue of her eyes.

"It will, my children. It will. The first field units will be ready within forty days. This peerless jewel will activate copper to supply abundant atomic power. The units will fly like ships to the planets which they are to drive, three to each.

"Within a hundred days, the planets will all be lifted above the photosphere, and the skies will be merciful again.

"A few hundred days more, and they will be driven beyond the critical point, so that no more power will be needed. The tidal thrust of the Sun will send them out, and out, speeding them in their new orbits, so that life—our kind of life—may continue upon them, even after the collapsing etheric spheres are gone."

A solemn elation had come into the fresh youth of his voice.

"For ages beyond all reckoning, Ken my son, the planets will turn about the Sun. And our children, upon them, will rise to heights of culture and happiness beyond our dreams.

"There will be vicissitudes, disasters. Men may lose the power of travel between the planets, may sink even to

savagery. But all life, we know, carries the germ of human intelligence. And the seed of man is now on every planet.

"And if he falls, man will ever rise again."

His rapt eyes fell to the flaming, living wonder of the jewel in his hands.

"This great crystal," he said, "will endure forever. It can hardly be destroyed. And men are not likely to lose it—forever. Its beauty will always restore the upward urge, and the wonder of its power will give men the key to advancement."

He lifted the great, pellucid sphere above his silvered head, where it flamed like an eternal beacon.

Ken and Wyndonee looked for a moment up into its fire, and then turned silently each to the other, entering a nearer, more intimate wonder.



Intra-Planetary

A surprising story by CHAN CORBETT



With a savage roar of vibrations the ranks surged through the white monster.

TUBO was weary and a bit afraid. This was his fourth journey through the tremendous reaches of outer space, yet he liked it no more than he had the first. Even in the new space skin he had recently invented and been the first of all his tribe to use, the risks were desperately great. For the vast emptinesses between the worlds of his universe were peopled with strange terrors and unimaginable dangers.

Tubo felt a shudder pervade the semi-torpid roundness of his huddled being as he peered through the pale translucency of the enveloping space skin. He was helpless, exposed to the cruel sportiveness of chance. All the frantic science of those last feverish moments within the expiring world had been unable to gain him the secret of motile navigation in space. The strong currents that blew through the universe

swept him about in aimless progression.

All around, in tempting profusion, bathed even as he, in the strange, fierce glow that permeated all space, moved inviting worlds, elongated, breasted the universe currents with erratic, incalculable orbits. How many times had he attempted to plot the path of the world he had recently quitted, to bring it within rigid mathematical laws, and failed?

Ah! That last sweep had brought his sheathed, protoplasmic form almost to the very surface of a lovely, heaving planet. He pushed violently with all his uncomplicated fluidity against the hardness of the space skin in a vain attempt to hurl himself upon that beckoning surface.

If only he could make contact, attach himself. In seconds he would have burrowed into one of the innumerable tunnels that led from the glow-exposed surface into the soft, warm, welcoming darkness of the interior. Life there was luxurious and food was to be had for the gulping.

But alas! A mocking cross-wind of space, a swift, incalculable swerve on the part of the plunging planet, and he was once more buffeted in emptiness. The terrible glow of the universe was beginning to take effect upon Tubo now. It was this inimical radiation that constituted the greatest hazard of space travel. It shriveled and seared and burned—even penetrated through the protective sheath in which he was enfolded.

He felt his body growing hard and taut. His delicate senses measured the rate of evaporation. His mind sped with lightning swiftness through intricate calculations. He had five minutes more of universe-time before the radiations would shrivel him to a lifeless husk. In that period he must effect a landing on a proper planet, or else—

Tubo was a great scientist, the greatest of his tribe—for that matter of all

the tribes that peopled the planets of space. Other tribes had better natural protection than his; they could form space skins at will from the materials of their own bodies. Tubo and his kind had no such powers. All the more honor to him then for inventing and constructing an improvement on their natural covering.

And it had been Tubo who had discovered, in the depths of his laboratory, that the world they inhabited was a dying world. He grimaced bitterly to himself even now at the thought.

He had hoped, after three former forced hegiras, that this planet would prove his last resting place. It almost had—but in a different sense. He had been the only one to escape. All the others—those of his own tribe and of the numerous other tribes who inhabited the planets with them—had perished. A wave of resentment coursed over his quiescent, rounded protoplasm.

Tubo had no organs of thought as we know them, no differentiation of functions. Thought was a process of the totality of him; so were the other functions of life; ingestion of food, evacuation of excreta, reproduction, sensory perceptions. There were no male and female in the world of Tubo, nor was there death except by violence or accident. Tubo reproduced by binary fission, a splitting along a longitudinal axis. Tubo was not one, he was a million different split personalities.

IT WAS all the fault of those other tribes, he thought resentfully. Why didn't they leave him and his own tribe alone to a planet? Why did they persist in following, in colonizing where they colonized? Tubo's tribe ordinarily managed a peaceful existence.

True, the planet would sometimes cease its aimless, incalculable movements and remain quiescent in space. But that did not matter. Only once had a

world succumbed into the frigidity of death because of them.

In all other cases it had been the fault of the crowding tribes who followed them, who ate and drank voraciously of the life-giving intra-planetary fluids, and exhausted the wealth of natural resources within an incredibly short time.

He would never forget the world he had just quitted. Just as he was comfortably settled, and his laboratory set up according to his satisfaction, he recognized the symptoms of a dying world. He had warned the others; they had not heeded him. He had barely time enough to inclose himself in his space suit, and hurl himself out of the current of the underground river into the swift gaseous exhalations that jerked with spasmodic regularity through the chief outer orifice of the dying world.

He was ejected just in time. A sudden swirling upheaval of subterranean gas thrust him violently into space, spinning and bobbing. Looking back, Tubo saw the elongated planet ripple all over its flexible surface; then it was immobile. The orifice remained a gaping hole, moveless and still. The subterranean explosions had ceased. No gas puffed out. The planet was dead.

Tubo shuddered with the narrowness of his escape. His comrades, friends, all the inhabitants who had lived and jostled with him over a hundred splitting generations, were doomed to a horrible, hopeless death. Imprisoned within the bowels of the dead world, while the heat of subterranean fires ebbed into destroying frigidity.

The broad, warm, life-giving rivers slowly congealed and held their struggling forms in a movelessness from which there was no escape, until they strangled and died in dreadful, bursting agonies.

Tubo was no sentimentalist. None of his kind was. He accepted life and death, especially the death of others. But it was striking closer and closer to

himself each time. That last escape was too much by a hair's breadth for comfort. He was a scientist. Surely there must be some way— He stopped himself grimly. Time enough for that. Meanwhile he was in peril of immediate dissolution. The glow was beating in upon him, piercing his shrinking body with strange agonies. In another space-minute, he calculated feebly—

Ah! A planet swarmed huge upon his vision. It was moving rapidly, rushing through the universe in an inscrutable orbit. If only— A space flow swooped upon him, caught him in its vast force-thrust. It hurled him directly toward the lunging world, directly toward a gaping crater which led into the interior, where food, security and life beckoned to him.

Exultation beat through his rapidly desiccating frame, renewed his energies. Closer, closer, he was hurried, still in the clutch of the blessed current. Now he was at the very mouth of the orifice. It yawned before him with inviting blackness. Panic seized him then—panic and a sense of helpless suffocation. What if he were an instant too soon, an instant too late!

The planets of the universe were all volcanic in nature. At regular intervals the interior fires belched forth a hot effluvia of gases. An eruption now would send him careening back into outer space, tossing and bobbing. With awful clarity Tubo knew that this was his last chance. If he missed this world, he would die before chance could throw him in the path of another.

A faint eddy crossed the space current on whose bosom he was being carried. It came from the rapidly nearing planet. Nausea drenched his protoplasmic formlessness. Was it but the premonitory prelude to a geysering eruption, or was it— A back eddy sucked at him, swept him out of the clutches of illimitable space, pulled him

tumbling and twisting into the maw of a Stygian darkness.

Down, down the unfathomable gulf he dropped, like a plummet, past strange caverns and spongy traps, where lurked weird monsters whose single gulp was death, past them in safety, down, ever down, the wind of his flight whistling through his space skin, until, in a pale phosphorescent glow, he found himself hurtling through a series of hollow caverns, whose dark red, spongy walls glistened with a dripping dew.

FRANTICALLY he tried to stop himself. This was the ideal place for settlement; this was a home as good as the one he had just hurriedly quitted. Nowhere else within the recesses of this vast interior world would he find existence so secure, so comfortable.

Furthermore, during the long, terrible space journey, certain ideas had pulsed with gathering force through his being; plans had matured which he wished to put into effect at once.

Yet the beckoning red walls slipped upward with hopeless speed. In another instant the caverns would end, and he would find himself immersed in the subterranean river which would sweep him to remoter and more barren reaches. He bumped! Breathless eternity! Would he tear loose from this last hold, or would the friction between the soft pulp of the cavern wall and the smooth slipperiness of his space skin bring him to a halt? He cursed now the protective covering that had brought him safely through his interplanetary flight. His naked being, viscid and semi-flowing, would have perished long before this caught hold.

He quivered, swung aimlessly. The least shudder, and— Ah! His swings grew shorter. The spongy wall enfolded him lovingly. He was being embedded. He was safe; he was home! He breathed a sigh of thankfulness.

An all-wise, omnipotent Being had

guided him safely, had peopled the frightening depths of space with innumerable worlds, equipped to the last detail with all the necessities for life and continued existence. Not that he hadn't heard rumors of strange planets that roamed the galactic universe, to all outward seeming like these kindly worlds, whose interiors nevertheless harbored strange, poisonous compounds, whose mysterious depths meant instant death. He, Tubo, had been fortunate thus far.

He set to work at once. He uncoiled his huddled round form, straightened it to the rodlike length which was his normal shape. He pushed with all his strength against the resilient membrane of the space skin. It gave, punctured. With a gasp of thanksgiving he wriggled out, attached himself with a shuddering ecstasy to the soft, dripping cavern wall! It felt good. The red dew sucked into his naked form, swelled him with a satisfying feeling of fruition.

"Hello!" The vibration impacted on his delicate protoplasm, wriggled him around toward the speaker. He was not alone, naturally. Not a planet in the universe but was tenanted with swarms of beings—members of his own race, members of other races.

The person who had greeted him swung chattily from a nearby wall. He was not of his tribe; he was round and smooth and smaller. "A stranger here?" the round one asked in friendly fashion.

"Yes," Tubo told him. "My old world died. I've just come in from space."

"I know," the other remarked sympathetically. "It's happened to me, too. Just as I get all set and comfortable, something always goes wrong with my planet, and I've got to get out in a hurry. I just came here myself a short time ago. Haven't even had a chance to split up yet. But here, we haven't introduced ourselves. My name's Strep-ton."

"Mine's Tubo," the scientist said. "Now look——"

But a change was taking place in Strepton. The round sphere of him commenced to quiver all over. The clear luminescence of his body clouded. The vibrations increased. Then slowly, at the poles of his being, two tiny indentations appeared, sank deeper and deeper until Tubo's new friend was attenuated in the middle like an hourglass.

Tubo never knew what made him jerk his rodlike form convulsively forward just then. Perhaps it was the inordinate keenness to vibration that had set him apart and made him greater than his fellows. But it saved his life.

For the oval white monster who had pounced out of the spongy recess in which it had been lurking, missed him by a millimicron. Its huge, voracious bulk slithered on, unable to stop itself, straight for the splitting, reproducing body of Strepton.

Tubo cried out a hoarse warning, knowing even as he did that it was useless. Those in the throes of parturition were particularly helpless, unable to duck or dodge or squirm to safety.

Already the white mass of the slithering monster was arching itself over the hapless Strepton, avid to ingest this toothsome morsel into its slimy depths.

A last shudder coursed through the fissuring being. There was a rending sound, and Strepton broke literally into two. The white beast gulped. Strepton the Second disappeared with a horrible sucking sound. The monster slavered and rippled with gluttoned satisfaction, and kept on sliding down the trickle of red dew. In another second he was out of sight and the slobbering sound of his digestion mercifully quenched.

TUBO stared after him with trembling anger. The planets held their perils as well as the reaches of outer space. Give him time, a well-equipped labora-

tory, and he would bring certain experiments on which he had already embarked to fruition. Then——

The idle, chatty voice of Strepton broke in on his grim resentment. "Almost had me that time, didn't he?"

Tubo swung around. "Yes," he said slowly, "but he got your child."

Strepton gave a ripplelike shrug. "That's life," he said easily. "Besides," he added humorously, "give me time and I'll have a thousand more."

Tubo had no chance to answer, for the inhabitants of his new world came swarming to bid him welcome. They surrounded him, and chattered and squeaked and wriggled—uncounted millions of them. Fellow tribesmen, long and rodlike; round orbs like Strepton, in a thronging profusion of species; and certain pallid, slinking, corkscrewing creatures from whom the others moved gingerly away. Tubo himself could not suppress a shudder at the sight of one pallid stranger who almost brushed up against him.

"Stinking outlaw!" he muttered angrily to himself. There was something gruesomely pale and lusterless about them. Of all the forms of life who peopled the universe they alone slunk and squirmed their threadlike forms furtively along, shunning the friendly gregariousness of the others.

The pallid shape spiralled rapidly near him. "You needn't make remarks about me," he squeaked. "Spira has his own tribe waiting for him." With that he wriggled toward a colony of corkscrew shapes, hanging in a ghastly cluster on a neighboring wall.

Tubo frowned, but the clamor of greeting swarmed around and over him. His fame had preceded him. There were those in this world whom he had met inside other planets, and who had seen his work. They murmured awed, broken phrases to the other inhabitants, until, from the farthest nooks and

crannies of the world, they flocked to see the famous scientist.

Tabo was almost crushed under the clambering throngs of his well-wishers. Like true sightseers they remained, refusing to give way to late, hurrying throngs as the news continued to spread. They gulped the thin streams of red fluid dry; they burrowed into the soft red walls and ate and ate and ate to repletion; they paused only to split in a hundred different ways and to thrust their new-born offspring upon the spongy food of the caverns. The din was frightful; the crush unendurable. And all the while the pallid outlaws hung to a single spot, burrowing deeper and deeper with a certain terrible ferocity.

A clamor arose suddenly within the outer pressing ranks—a sound compacted of terror. Tabo, half-crushed, dazed under the weight of his well-wishers, knew that sound for what it was. A cold anger burned through him. Fools! Heedless, stupid fools, all of them! Their silly clamor and crowding and jostling had brought the avenging monsters of the planet upon them.

Already he could hear the peculiar, horrible slimy sound with which they engulfed their prey. Already the screams of the victims smote his quivering form, sent panic waves through the close-pressing hordes of his fellows. They surged blindly in all directions, seeking safety in tiny nooks and crannies.

Far off, bearing down upon them with steamy exhalations, was a flooding river. It was hot; hot with the forced temperature of the distant, interior fires. And on its flowing crest, rearing themselves avidly in glaring expectation, were myriads of white oval monsters. So many were they that the normal red-colored river was a pasty white—almost like Spira and his kind.

There was not a moment to be lost. Scattered as they were, the frightened

multitude was an easy prey. The appetite of the white beasts was insatiable. They would hunt and harry and gobble until only the most securely hidden would escape. The unnatural warmth of the river that carried them in its bosom lent them added ferocity, while it weakened the delicate protoplasmic tissues of their victims.

IN A FLASH Tabo saw the answer to the problems that had been puzzling him, on which he had worked unavailingly before his former world had expired. But first there were other more immediate and pressing things to be done. His very life was at stake.

His long, slender form vibrated rapidly. The clear call of his kind rippled outward in a widening wave, impinged on the receptive protoplasm of his fellows.

"Stop where you are!" he shouted. "In flight there is death for all of us. We outnumber the enemy a hundred to one. Safety lies only in swift attack. Forward!"

The panicky hordes stopped irresolutely, wavered, then caught the contagion of his voice. A brave recklessness invaded their beings, filled them with strange new, satisfying ardors. Formerly they had always fled from the dread, engulfing monsters, trusting to the multiplying rapidity of their reproduction for the continuance of the species, but never had they dared to stand and fight. But now they had found a leader, and it was good.

The multitudes stopped, formed in close, solid ranks. Only the outlaw, pallid corkscrews, led by Spira, remained apart. They burrowed more and more rapidly, until they were completely inclosed and out of the noise of battle.

The white-dotted flood roared down upon the tribes. The white beasts reared themselves joyously and fell with slobbering, sucking sounds upon the massed ranks. Here was food in abun-

dance, such as they had never seen before. Fear was not in their bodies; they had no organs for such neuroses.

But Tubo was already threading the phalanxes of the tribes with strong, whipping movements. "Forward!" he shouted and swam boldly into the swarming flood. Behind him grew a mighty yell, as the tribes, inflamed by the sight of their leader, hurled themselves after him.

The battle was on!

The enemy reared and swept into their slimy folds thousands of the struggling tribesmen. Screaming beings struggled hopelessly inside their fearsome maws and dissolved into fluid extinction before the horrified gaze of their fellows. The slaughter was terrific!

For a moment the ranks wavered. There was no fighting these terrible creatures. Then Tubo's voice rose strong and clear again. "Smother them with your numbers! It is your only chance!"

With a savage roar of vibrations they smashed forward. A hundred clung to each thrashing beast. Five, ten, fifteen, were swept with hideous screamings into the fatal bodies, but others took their places. The white monsters twisted and writhed and engulfed with sucking movements. But the tribesmen clung to their enemies with the tenacity of leeches. Slower and slower grew the thrashings, the convulsive jerkings, until, with a final shudder, the dread things lay limp and silent underneath their swarming weight.

The terrible planetary monsters had been defeated. For the first time in the history of the universe they had succumbed to a direct onslaught. The few remaining of the horde broke ranks, and swam hastily back against the untainted redness of the underground river, seeking their lairs in the caverns of the chalk-white cliffs, to lick their wounds

and gain recruits from the ever-spawning rock.

The tribes went wild with joy. Uncounted thousands had died in the tremendous conflict. But that did not matter. The dead were dead, and those alive could now split and split to their heart's content, bearing innumerable progeny into this habitation that was now almost miraculously freed of the lurking menace. In an unbelievably short time they would swarm in such reckless profusion as no planet had ever witnessed before.

But Tubo was not exulting. A frowning quiver passed over his naked being. Strepton, pulsing rapidly with the strain of his recent exertions, and the near approach of a new parturition, asked anxiously: "Have you been hurt, Tubo?"

The scientist wriggled a negative. "It is not that. But have you felt, Strepton, how cold it is becoming?"

Strepton shivered suddenly. "B-rrr! Yes! I hadn't noticed it before. It was so hot only a moment ago."

"Exactly. The interior fires have cooled. The white monsters stirred them to fever heat to overcome us. When that failed, the fires somehow quenched. Strepton," he went on impressively, "our planet is dying."

The little round fellow rolled over with fright. "Impossible!" he wailed. "I just got here. I couldn't make another space journey now. I'd die. I'd be——"

BUT Tubo was not listening to his complaints. He was thinking, thinking as hard and as fast as he had ever done in all his life. He, too, would not so soon be able to withstand the perils and strains of the inimical universe outside. It was definitely colder now.

The joyous multitudes had felt it, too. Binary fissions remained unfinished, as life processes slowed. The delicate protoplasm of their bodies quiv-

ered and jelled. Motility became a difficult, painful process. Anguish quivered on all their straining forms. Even the most stupid knew that the planet had abruptly slowed its forward motion, that somehow it had become motionless, quiescent, fixed in space. The planet was dying, and they——

Tubo saw everything. The red sponginess of the caverns, ordinarily a strong, regular expansion and contraction, subject to definite, calculable laws, now fluttered irregularly. The vibrations were slowing, becoming feebler. The red dew on which they fed was a trickle where it had been a flood, and a new stream burst out of the walls—thick, viscid, yellow, slimy. A poisonous exudation whose appearance was a ghastly horror.

The scientist wriggled sharply. "I have it, Strepton," he cried in high excitement.

"What?" asked his friend stupidly.

"The solution to our troubles. We've been fools all our lives—all the lives of the uncounted generations before us. We are greedy. A world, the universe itself, was a thing to be exploited as rapidly as possible, to be sucked dry of all its natural resources. We had enemies, it is true—the fierce white monsters. They ate us and gobbled us and held us down. We had only one weapon against them, that is, up till now. Our fecundity!

"We overwhelmed them by sheer procreation. If we split into new personalities faster than they could seek us out and destroy us, we exulted. We had been victorious. Blind fools that we were! Thereby we destroyed ourselves. Strepton, the white monsters were not our enemies; they were our best friends!"

The translucence of Strepton's roundness clouded. "Have you gone mad?" he exclaimed angrily. "If the others should hear you——"

"They shall!" Tubo cried. His surface was luminous with rapid thought. "I've found the secret. Listen, all of you," he raised his voice.

The moaning died. The tight-packed multitudes, stiff with approaching dissolution, looked fearfully toward the rodlike scientist.

Tubo was their leader. He had defeated the unconquerable planetary beasts. Perhaps he could do something now. It was terribly cold. The hot inner core of the world seemed to have quenched. The slow pulsations of the cavern walls were the merest quiver now. They were trapped in an expiring world.

"I have discovered the secret," Tubo shouted, "the scientific secret of the universe. It is balance! Our fortunes, our very lives, are inextricably bound up with the planets we inhabit. As long as we are sensible and moderate, the worlds of space maintain their inner fires, the red rivers flow with nutriment, the cavern walls provide us food and comfortable shelter. But once we become greedy and tear recklessly at the profusion of their natural resources, once we blindly and without thought spawn innumerable progeny, what happens? The planets cool, they expire, and we in our folly with them."

He paused, and looked over the stilled, breathless multitudes. "I hesitate to say this—it is only an analogy, you understand—but it is almost as though the senseless worlds of the universe, with their volcanic inner fires and regular eruptions, their caverns and swift flowing rivers, have a strange, formless, mineral life of their own. They can bear so much of us and no more. Crowd them to recklessness and they die of our profusion, even as we——"

A snicker interrupted him. As one the taut tribesmen turned to the sound of the scoffer. It was Spira, thrusting his pallid corkscrew shape out of the

wall in which he had been comfortably embedded.

"Ho! Ho!" he snorted. "A philosopher, a spinner of moonshine. The next thing he'll be telling us that we're just parasites on the bodies of these mythical planet creatures of his—that their life is more important to the universe than ours."

"You shut up, Spira," Tubo cried, outraged, "and don't put your own sacrilegious thoughts in my mouth." He reared his rodlike body proudly.

"We tribesmen are the ultimate creations of the universe. We are the owners and inheritors thereof. The planets were formed by an all-wise Being for our maintenance and enjoyment. We possess the power of thought; we are the finest flower of existence. It is silly to think that evolution could have produced anything superior to us.

"I told you it was merely a tentative analogy; that the planets might—abstractly, you understand—possess a modicum of queer mineral existence of their own. But our time is getting short; it is getting colder and colder. Just now we have upset the balance of things, more definitely than ever before. We defeated the white beasts. We have crowded and spawned in tremendous profusion. As a result the planet has become a dying world."

"What's the answer then?" Strep-ton queried.

Tubo took a deep breath. "This! An end to our reckless, wasteful methods. An end to the rapid destruction of natural resources. A reestablishment of certain checks and balances which we destroyed by defeating the planetary monsters. They evidently had their niche in the scheme of things. They seemed our most deadly enemies; they killed, it is true, individuals of us, but by keeping our numbers in bounds they unwittingly maintained the delicate balance of nature, and in the larger sense, were our benefactors."

A LOW GROWL went up from his auditors. From time immemorial they had known the terrible beasts as the ogres of their existence, and now this Tubo came along and hailed them as brothers. It was ridiculous; more, it was—

"I suppose," squeaked Spira sarcastically, "we'll send our new friends a letter of invitation to come and munch on us. And apologies, too, for having dared assault their mightinesses."

Tubo checked the rising ripple of laughter with a blaze of quivering luminescence. "You won't have to apologize, Spira," he said pointedly. "While the other tribes were fighting and dying, you and your cowardly kind were safe ensconced in your hide-out." The pallid one wilted under the roar of acquiescence. With scared celerity, he burrowed back into the walls.

The scientist went on. "We must act, and at once. It may be too late even now. Don't worry about the planetary monsters. They fit somehow into the scheme of things, and we must let them live unharmed. But I don't intend permitting them to prey on us as of old. In the laboratory on my former world I evolved a defense against their depredations—a fluid which I can manufacture in huge quantities from the minerals of this planet. We'll pour it into the rivers and thus spread it to every corner of the world. It does not kill the beasts, but it renders them harmless; deprives them of their strength."

"But if you remove what you have called a salutary check upon us"—Strep-ton wrinkled his roundness in expostulation—"it will only make things worse."

"Not at all," Tubo answered calmly. "I am proposing a planned economy, a conservation of our natural resources, an expert balancing of forces—birth control, a new deal!"

"A new deal!" The phrase whispered from one to the other, grew from a whisper to a murmur, from a murmur

to a torrential roar. It had such a satisfying, mouth-filling sound; it meant all things to all tribesmen; it held a content of vague, large promises that were difficult to pin down, and therefore all the more glamorous. Besides, the cold was creeping into their very vitals. The world was definitely dying, and only a fortunate few of all their number would be able to escape into the soul-searing reaches of outer space. Fewer still would find a new world in time. They had nothing to lose.

So it was that with hardly a dissenting vote the plan was adopted and Tubo acclaimed as the first dictator and coordinator. Spira and his brethren remained cannily out of sight.

Tubo organized things at once. Time was precious. He appointed Strepton his lieutenant. The tribes were counted and separated into companies. Each was given a definite task. The cold was creeping up on them, slowing their movements, freezing their delicate bodies. The planet had been fixed in one spot in space for an unconscionably long time. The volcanic explosions were barely perceptible.

But only to Strepton would Tubo confide his fears. To the others he was a driving dynamo of energy, a fount of radiating enthusiasm. He infected them with his vigor. In double-quick time a laboratory was set up, and a corps of willing, though inexperienced assistants placed at his disposal. The chemical fluid was soon being manufactured in large quantities, and dumped into the languidly flowing rivers.

The next step was to put a stop to all procreation for a fixed period of time. Tubo worked feverishly at the problem. Finally it was solved. He found that the involuntary urge to binary fission was a function of the saline content of the rivers and of the amount of food ingested per unit of time.

The second half of the problem was easily attended to. Food was rationed out in scientifically calculated portions. But the first was not so easy. It was only after herculean labors that Tubo evolved an apparatus which extracted the reproduction-accelerating salt from the mighty rivers in sufficient quantities.

Then there was the task of getting rid of the glittering stores of crystals. Tubo finally solved this seemingly insuperable problem by eliminating them through the numerous fissures and tiny tunnels that led to the outer surface of the planet. There it was left in huge, caked mountains.

The third step was to scatter the tribes to assigned habitations in the planet. Tubo had noted that whenever they swarmed in huge throngs as they did now, it played havoc with the secret internal economy of the world. Accordingly he had scouts map the entire interior of the world, bring him careful estimates of resources, mineral deposits, growths of food, navigable waterways, climate, ease of communication, etc.

Then, with this data on hand, and a knowledge of the peculiar requirements of each tribe and its characteristics, he was able to assign it to a suitable territory. Here he ran into difficulties. For individual equations were involved. There were murmurs of autocracy, protests against particular assignments, cries of favoritism.

But Tubo crackled out his orders, unbending, harsh with strain. In the end he won. For the cold was a bitter ally. Already some of the weaker and more delicately nurtured had succumbed. Blind obedience was their last chance of survival.

THEN Tubo called for volunteers from these tribes who could at will produce membranous space suits. Volunteers to wriggle their way to the surface of the dying planet, to cast themselves

into the destructive radiations of outer space, and attempt their tortuous way to the other worlds of the system.

"But why?" Strepton, his lieutenant asked, puzzled.

"So that my work may not die," Tubo answered, exalted. "It is a question whether it is not too late to save our own world. The space volunteers will bring the tidings of my plan, of the technique I have evolved, to all the universe. They must organize even as we have fumblingly done, with more of leisure, with improved equipment. The new deal must go on, even though we as individuals die. The universe must be made into a safe, secure place for our people, with every world an ordered, flourishing economy, where chance and sudden death shall have been totally eliminated."

Strepton stared at him with awed admiration. It was a dazzling vision. "But why," he asked hesitatingly, "don't you go yourself? You have the space suit you invented. The chances here of survival, you admit, are slim. Why not escape while you have the chance?"

Tubo turned away. "My place is with my people," he said abruptly.

The volunteers were finally trained, sent on their hazardous missions. Others went, too, pallid with fear, forced out by numerous assisting shoves—Spira and his wretched tribe of outlaws.

Strepton shook his head. "They'll make trouble," he warned sagely. "You should have kept them here under your eye."

But Tubo smiled secretly and said nothing. He knew that Spira's tribe could not survive the inimical radiations of space. They shifted from world to world only on chance, occasional collisions between the planets. Tubo was not a sentimentalist, you see.

Now came a fearful period. The cold seemed to be getting more bitter, the streams grew more and more sluggish.

The tribesmen were dying in increasing numbers. The living could hardly crawl about their business. Tubo shut himself up in his laboratory, and gave way to despair. Had all his efforts been in vain? There was nothing else he could do.

Once Strepton crept slowly in to report a strange phenomenon. The barely moving red rivers had suddenly overflowed their banks—an inundation. "But the strangest thing of all," he reported in a queer, excited voice, "is the character of the new flood. It's a colorless liquid, and it's full of dead bodies. The dead bodies of our people! It's all over with us."

Tubo galvanized into action. He lashed out of the laboratory, stood on the banks of the torrential flood. Strepton had told the truth. Each wave cast up at his feet its bloated, sinister cargo. Rodlike people of his own tribe, round fellows like Strepton, thousands on thousands of them.

Strepton said in a hushed, miserable voice. "The world is dead. These are our people from the outlying districts."

Tubo bent over, examined them closely. When he straightened, there was a strained look on him. "They are not our people," he stated positively. "These are strangers from other planets, and they've been dead a long time."

"But how——" commenced Strepton, gasping.

"I don't know," Tubo cut him short. It was unbelievable, yet there was the evidence. The dead beings continued to wash through the subterranean channels. The tribesmen watched them with superstitious, fearful eyes. It was a judgment of the Almighty upon them, they whispered, for having hearkened to the blasphemous proposals of Tubo. He was flying in the face of nature, of things-as-they-are and always-would-be. This was the retribution.

But Tubo locked himself up in his

laboratory and did not listen. This weird irruption was at present insoluble, yet he believed that it was in accordance with definite natural laws. Later, if things worked out, he would apply himself to the problem. If they didn't—he shrugged all over—it wouldn't matter either way.

The cold seemed now at a standstill. The rivers barely flowed. The inundation had subsided. The dead bodies were beginning to stink. The walls to which his laboratory was attached hardly vibrated. It took delicate instruments to discern the rate of expansion and contraction. His viscous, motile jelly was hardening. Death was not far off.

Then, with hopelessness creeping over him, he turned a lackluster form to his instruments. He quivered. Was it but the illusion of approaching death? The temperature filament. It showed a rise! A slight rise, it is true, but a definite, perceptible up-grade, nevertheless. Life surged through him again. Feverishly he examined his other instruments. The liquid-flow cilia. An increase in speed. The pressure bellows. The walls were heaving at a more regular rate, and with greater force.

Tubo flung himself outside. He shouted in stentorian tones. The colony of his cavern remained moveless, dulled in apathy. Then, as the purport of his exultant message penetrated their half-dead beings, they squirmed toward him, lifted themselves eagerly.

What was that? The dying planet was functioning again? Was it possible? Had Tubo really won through? Something rumbled and rolled echoing through all the caverns and subterranean rivers. A belch of hot, eruptive gases. The planet quivered; it moved. Once more it turned and heaved in space, after long quiescence.

A shout sprang from the multitude, was repeated and reechoed in a wide, expanding wave until not a colony in

the remotest parts of the world but knew the glad news.

They were saved! And Tubo was their savior! Tubo, mightiest scientist since the universe began! Tubo, immortal dictator to a grateful people!

DR. TRUESDALE closed the door softly and carefully behind him, then capered and whooped.

"It's worked, Patterson, it's worked!" He was skinny and bald, and his eyes glittered behind thick lenses.

Eric Patterson, bacteriologist in the Madison Hospital, lifted his eyes from the microscope through which he was peering. "Eh, what's that?" he muttered vaguely. "What worked?"

"The serum, you fool!" Dr. Truesdale exploded. He skipped about like an elderly faun. "I'm rich; I'm famous now! The universal serum—Truesdale's serum—for all diseases. One injection and——"

"Tone down a bit," Patterson advised. "And tell me what happened to give you delusions of grandeur."

Truesdale sputtered: "Why, you insolent young puppy, you——" Then he laughed. "Come and see for yourself. You know the case in Room 13?"

Patterson nodded. "Sure," he said bitterly. "I've just finished looking at a specimen of his blood. He's got the bugs of everything but the bubonic plague in his system. Swarms of tubercle bacilli, streptococci galore, and a lovely little colony of *treponema pallida*, the spirochetes of syphilis. It's a wonder he's lived this long, even in a coma. He should be dead by now."

"Dead nothing, you idiot!" Truesdale shouted. "He's alive, and not only alive and turning in his bed, but actually asking for food!"

"What's that?" Patterson asked sharply. "You told me half an hour ago his temperature had fallen from 106 to

95 within minutes; that his heart barely fluttered. No man has ever come out of that alive."

"Well, this man has," Truesdale retorted. "You fellows in the hospital laughed at my serum, wouldn't give it a chance. Well, I've showed you. He was as good as dead, anyway, so I sneaked him a dose while the chief was out. For an hour it was touch and go. Then he snapped out of it. Look at him."

Patterson looked. There was no question about it. The patient who by all the rules of medicine should have been ready for the slab was peevishly twisting his scrawny frame and babbling about steaks and he-man's food.

"Take a sample of his blood now," the doctor crowed.

Once more in the privacy of the laboratory, Patterson bent over his slides. When he arose, there was a queer look in his eyes.

"Truesdale," he said shakily, "I don't understand it. I've got scads of bugs under there as lively and active as you please. Every pathogenic variety you could think of. No," he interrupted himself, "there is one missing. The *treponema pallida* have disappeared, been wiped out. How in Hades that chap in there is not only alive, but with all the symptoms of recovery, beats me."

Truesdale was taken aback, but only momentarily. "What's the difference what bugs he's got in his system?" he chuckled. "He's cured, isn't he?"

And the patient was cured. A conference of grave and reverend doctors pronounced him as such; the man himself was positive of it. Yet his blood still swarmed with pathogenic bacteria.

Because it could do no harm, Truesdale's serum was tried on others in the hospital. A few cases unaccountably died, but the vast majority within a day showed unmistakable improvement. "Cause and effect," muttered Patterson skeptically.

But he kept his thoughts to himself. Even when it was noted that the geographical factor had a great deal to do with the efficacy of the serum. Only as it was given in slowly widening circles from the hospital did it work. And there were remarkable cures in individuals within the circles, individuals to whom the serum had not been administered. As if, Patterson thought, some influence were slowly radiating from the hospital, in ever-widening circles, evolving immunity to all diseases.

But, in the eyes of the world, and of most of the medical profession, Truesdale's serum was responsible. He became rich, famous, on the pinnacle of glory, almost overnight, while Patterson puzzled over his messy slides, his microscopes. The bugs were all there; in every specimen, yet somehow they had lost their capacity for harm.

He noted, too, the slight drop in blood salinity, the little deposits of free salt that evaporated on the skins of the recovering patients. And he also noted that the blood temperature of the human body had increased to a norm of 99.8 degrees. As though the entire human race had become slightly sick, slightly feverish, and thereby obtained an immunity against the further ravages of disease.

But there were no qualms, no misgivings, on the part of Truesdale and his henchmen. The serum was the cure-all; and he was the greatest benefactor the world had ever known. In the course of years, every one was inoculated with the serum, and gradually, sometimes after the use of the serum, sometimes in advance of it, the immunity spread over the earth. Every one was a little feverish, but no one died of disease. And the name of Doctor Truesdale went rocketing down the centuries, long after Patterson and his little doubts were dead and forgotten.

Even as the name of Tubo resounded in another and different universe.



I AM NOT GOD

*Beginning a gripping two-part
story of catastrophe and science*

by Nat Schachner

AST-4



Deborah! She was trying to prevent him from loosening his helmet, while all around him humanity was succumbing to the nebular gas.

THE FIRST appearance of the nebula was unexciting enough. It was small and inconspicuous, and but one of a dozen faint blotches of deposited silver on the exposed photographic plate of the new two-hundred-inch telescope. The astronomer in charge of the observatory checked the plate against the older ones in his position.

AST-5

session, and found that this was a new nebula. But so were several others in that particular area—which was understandable enough, considering the increased light-gathering power of the recently installed instrument.

He therefore duly noted its position, jotted down that it was of the order of the twenty-fifth magnitude, gave it a

catalogue number, G 113, and filed the plate away for further routine study. The discovery did not rate a line in the world's newspapers. But the scanty data appeared, in consort with other anonymous numbers, in the next issue of the *Astrophysical Journal*, a month and a half later.

It was there that Stephen Dodd first came across it. Ordinarily it would have meant very little to him also. But it happened that he was just then in the throes of a highly upsetting bit of research, and there was not a nebula in the entire universe, big, small or medium-sized, remote or near, in which he was not feverishly interested.

For the thousandth time his eyes clung to the tightly sealed flask that nestled with careful caution in its supporting cradle. Within it a greenish gas glimmered weirdly in the overhead illumination of the laboratory. For the thousandth time his eyes strayed, almost unwillingly, yet with fearful fascination, to the motionless, strangely stiff little body of the white mouse that lay unhearing, unseeing, within the oxygen chamber.

Steve Dodd shook his head savagely. Damn it! If only the mouse were dead, it would be understandable, normal. The green gas he had toiled over would then have been but another poison gas, lethal enough in all conscience—a deadly weapon to add to the arsenal of already over-sufficiently equipped nations—but nothing that did not fit into the established properties of familiar gases.

But that mouse lying there, still, motionless, was terrifying. For a month, ever since he had tried a minute spray of the new gas on its outer skin, it had not moved. Its heart had stopped beating, the most delicate tests betrayed no sign of breathing, of the normal processes of metabolism that continue without pause in a living body.

Yet the mouse was not dead. Its blood, skillfully withdrawn in hypodermic specimens, remained unclotted and

fresh and bright-red in appearance. The organs showed no evidences of degeneration; the bacterial decay and loathsome putrescence that begin almost immediately on death were conspicuously absent. And, worst of all, its eyes, bright and beady in life, were still bright and beady and unfilmed. They seemed to follow Dodd with mute and hopeless pathos, as if imploring him to remove the weird catalepsy that had clogged its limbs.

Steve Dodd shook his head impatiently, in unconscious answer to that mute appeal. He had tried his best to bring life back to those tiny limbs with every device that modern science and medicine held available. Baths of pure oxygen, intravenous injections of digitalis, strychnine and adrenalin, electrical massage and short-wave treatments. Everything that his friend, Dr. George Cunningham, sworn to secrecy, could suggest.

But the mouse lay in its cataleptic trance, unmoving, unstimulating, shriveling daily, wasting away to a thing of skeleton bones and loose, wrinkling skin, queerly alive, yet soon to die irretrievably.

Steve shivered, though the night was warm, and his glance went back to that strange, semi-luminescent green gas in the specially leaded glass container. That was another property about it which made it even more of a menace. Its remarkable penetrating powers! Ordinary glass was like a sieve to it, so were wood and stone and most of the metals.

Its first production had almost sent him, Stephen Dodd, into the place of the mouse. It was only the accidental intervention of a lead screen used in conjunction with his X-ray work that saved him. So the glass he now used was leaded, and he wore a special suit and helmet of fabric heavily impregnated with lead salts when he worked with the gas.

STEPHEN DODD was a chemist, and a very good one. He was internationally known for his work on the rare gases, and his laboratory was generously endowed by the Lauterbach Foundation. Yet he was not quite thirty, and possessed of decided views on a good many matters only remotely connected with the science to which he had devoted his life. Deborah Gardner, daughter of the famous astronomer, Samuel Gardner, who headed the observatory in the same university town, could vouch for that. Perhaps that was why, she thought tenderly to herself, Steve was the darling he was.

He had started his researches with the idea of duplicating nebium—that strange, unknown gas which is found in most nebulae. Bowen of Pacadena had proved in 1927 that the three mysterious bright lines in the nebular spectrum—whose wave lengths are 5007, 4959 and 3727 Angstroms respectively—are due to multi-ionized oxygen and nitrogen under peculiar nebular conditions. But no investigator had been able to reproduce the mysterious lines in earth laboratories.

Dodd had thrown himself into the work with characteristic enthusiasm. For a year he had toiled ceaselessly, immured night after night in his laboratory with complicated apparatus and machines capable of generating giant electrical charges. Finally, using a modification of a De Graaff electrostatic machine, he had been able to superinduce multiple ionizations on a mixture of oxygen and nitrogen—in other words, plain, everyday air.

But, with success at his very door, the thing itself eluded him. For the spectral lines were slightly displaced. Allowing for all possible velocity shifts, they were still seven Angstroms each to the left of the corresponding line in the nebular spectra. It was infuriating. He had discovered a new type gas, but it was not nebium, the gas he had set out

to discover. At least, it was not the nebium in any of the nebulae known to date.

THEREFORE he had called on Samuel Gardner, his good friend, and prospective father-in-law, to assist him—though not even to him had he disclosed the terrible properties of the pseudonebium he had evolved. The secret of its manufacture must die with him; the very fact of its existence must remain undisclosed, unless somewhere in the universe it existed naturally.

Thus it was that Gardner good-naturedly analyzed the spectra of nebula after nebula, thinking young Steve a little bit crazy, but to be humored nevertheless.

Steve received the reports with a queer mixture of disappointment at repeated failures and relief that he would not be compelled to disclose what he had discovered. For nowhere in the universe were the nebium lines anything but normal; nowhere was there evidence of the existence of pseudonebium with its seven Angstrom units shift to the left.

Steve lifted the receiver mechanically, heard himself calling the observatory. After a decent interval, Gardner's quizzical drawl came lazily over the wire.

"Hello, Steve!" he complained, "this is my busy night. If you've got any more fool nebulae for me, you'll have to count me out. I——"

"Listen, Gardner," Dodd pleaded, "this is the last batch. If you can't locate what I'm after to-night, I won't bother you any more." He had determined to give his scientific sense of fair play this final opportunity. To-night, after Gardner's usual report, he would destroy the flask with its dreadful contents, kill the mouse with weapons that left no doubt as to its demise, and forget all about it. Dr. Cunningham was close-mouthed, and besides, he did not know

more than it had been necessary to tell him.

It was characteristic of Dodd not to have sought personal aggrandizement from the discovery, or to think even momentarily of the fabulous sums the war departments of the various nations of the earth would have paid him for the formula. He had very positive ideas on the subject of the nations of the earth and all their works. Even now, the mad race of armaments was nearing its inevitable close. The earth resounded with the rumble of mobilizations and the thunderous roar of tanks and motorized artillery moving everywhere up to the frontiers. Ultimatums were in the air and dates set for the vast explosion.

"Well," Gardner chuckled, "this once; but mind you——"

"Here they are," Dodd interrupted hastily. He read off the list from the item in the *Astrophysical Journal*. They were mostly fifteenth or twentieth magnitude nebulae. When he came to G 113 he hesitated. The twenty-fifth magnitude was a bit faint for Gardner's apparatus. For a moment he was going to leave it out—it was such an unimportant speck of gas somewhere in the far remotenesses of the universe. The fate of the world trembled on his indecision. Then he read it aloud.

"Now listen here, my boy," the astronomer expostulated patiently. "I can't get that magnitude. You know that. I have only a thirty-inch spectrograph, not a two-hundred-inch."

"Oh, well," Dodd responded indifferently. "If you can't locate it, you can't. And remember, my promise holds good. This is positively the last batch. If their spectra do not disclose the one I'm after, I'm through, washed up!"

II.

IT WAS some three hours later, after 1 a. m., while Steve was dozing in

his chair, fatigued from work and jumbled emotions, that the persistent ringing of the phone awoke him. He stared around, bewildered a moment, getting his bearings. Everything was quiet and very peaceful. The noise of the neighboring city had dulled to a stealthy murmur, the laboratory enfolded him in its illuminated quiescence, the green gas glowed steadily in its leaded flask, and the mouse was still stretched out, gaunt and unmoving, though still alive, in the oxygen chamber.

He shook the black mop of his hair out of his eyes, picked up the receiver. It was Gardner, his drawl forgotten, his voice muffled and queerly excited.

"Hello, Steve! Just finished the spectroscopic analysis of that list. Here they are." He bit them off rapidly, concisely, one after the other. Angstrom units of the three nebulium lines monotonously identical, as always. Then a perceptible pause. "About G 113 now, Steve. Sure you gave me the right coordinates?"

"Sure," Dodd answered sleepily. "But just a moment, I'll check it." He flung open the *Journal* to the right page, ran his finger down the list, then read aloud. "Right ascension—1 hour, 9 minutes; declination—plus 52.8."

"Humph!" Samuel Gardner muttered. "That's exactly what you gave me before, but——"

"Couldn't locate it, eh? Don't bother then. The magnitude is evidently too low for your instruments."

"You're right, Steve. I couldn't locate it, but there's another nebula, close enough by to be its twin. Listen to this! Right ascension—1 hour, 8 minutes; declination—plus 51.7."

"That's funny," Dodd said puzzled. "Must be the same one, but it's the first time I've known the Peters Observatory people to be caught in an error."

"That's not the only error," Gardner pursued, still with that queer tinge of excitement in his voice. "The nebula I

have is of the order of the sixteenth magnitude, not the twenty-fifth."

This time Dodd was thoroughly awake. "But that's impossible," he protested. "A difference of nine magnitudes! Some one must have been drunk over there. I've a good mind to call them up right now and congratulate them on their staff. By heavens, I am. So long!"

"But wait," Gardner shouted, "I haven't told you——"

It was too late. Dodd had hung up and was already getting long distance. He was angry. If there was anything he prided himself on, it was meticulous accuracy, and here was the famous Peters Observatory——

Meanwhile Gardner was jingling the hook frantically, trying to get him back. But the operator was imperturbable. "The line is still busy, sir," she repeated sweetly, albeit a bit wearily, until Gardner swore and hung up in disgust. "The young idiot!" he muttered, and stared again with frowning intentness at the spectograph that lay before him, with its three bright lines plainly showing. Then he shrugged his scholarly-stooped shoulders. "Plenty of time in the morning to let him know, I suppose."

How could he know that every minute, every second even, was infinitely precious; that the continued existence of all life on this planet depended on those three innocent-seeming bright lines!

"Norman Kittredge?" Steve flung finally into the phone. The lengthy wait for a connection had brought his inexplicable anger to the boiling point.

A sleepy voice came through faintly. "Yes. Who are you?"

"Stephen Dodd, of East Haven. You're the fellow doing the plates for the new star map?"

"Dodd? Dodd?" the faint voice sounded puzzled. "Oh yes, the chemist. Sure, what about it?"

"Well, let me tell you something,"

Steve said carefully. Inwardly he was surprised at the irritation he felt. "You must have been drunk when you reported the coördinates for that new nebula, G 113."

There was a pregnant silence. Then Kittredge said furiously. "Now listen here, Dodd! If this is a joke, it's a damn fool thing. I don't know you personally, and I don't want to——"

"It's no joke," Steve retorted heatedly. "Look at that plate again, and check it against the figures in the *Astrophysical Journal*. Being out a degree or so in declination and a mere minute in right ascension may be not so bad—from your point of view; but when an astronomer of the Peters Observatory is out nine magnitudes, I'm giving him the benefit of the doubt when I tell him he was drunk."

Kittredge's voice was suddenly icy, carefully precise. "I'm going to make you eat those words, Dodd. I'm a fool for doing this; but I'm getting out that plate right now, and by heavens——"

The receiver crashed down on a far-away table. Steve waited, his irritated anger subsiding. He even grinned at himself. Wait until Kittredge got on again, meek and full of apologies.

"Hello!" It was Kittredge. "You still there?"

"Sure," Steve chuckled. "What's the story? Mislaid the plate?"

"No, Dodd," the astronomer answered coldly. "I have it right in front of me, and the *Journal*. If I was drunk then, I'm still drunk. The figures couldn't be more right. Now let me tell you what I think of you, young man." And for fifteen minutes he told him, steadily, continuously, without stopping for breath. It was an expert performance, and when Steve finally hung up, he was red all around the ears, his temples were wet, and his finger nails had dug red arcs into the palms of his hands.

"Whew!" he said to himself, almost admiringly. "That chap must have

driven mules in his time." Then his thoughts swung to his future father-in-law. "Damn!" he muttered. "He got me into a peck of trouble. Must have been his idea of a joke. I'll get him before I forget all the neat phrases Kittredge used." And up went the phone again.

There was real relief in Gardner's voice. "I've been trying to get you, Steve——"

"Sure, it was a great joke, wasn't it?" Dodd interrupted. "Kittredge thought so, too. Wait till I tell you what he called me——"

"Joke?" Gardner echoed, astonished. "What do you mean?"

"Don't pretend. Those figures you gave me. The *Journal* had the right ones."

"Oh!" Gardner said slowly. Then: "Steve, I was not joking. Mine were correct, too."

"You mean——" Steve started aghast.

"I mean that within the past month and a half the nebula G 113 has moved that distance over the face of the heavens."

"Great heavens, man!" Steve exploded. "Then it must be right within the solar system."

"Not quite. You didn't give me a chance to tell you some very important things. The spectral lines of G 113 are all shifted heavily to the violet. I've calculated a velocity of fifteen thousand miles per second in the line of sight—an extra-galactic velocity. That means it's now somewhere within a few trillion miles of our system, where no nebula has ever been known to be, and coming toward us with fearful speed. I'll need another observation, a month from now, to be able to plot its course definitely."

Steve forgot his anger. He was immensely interested. But after all, this was more up Gardner's alley than his own. He had forgotten all about the

fact that he had not been given the report on G 113's spectral lines.

"There is another thing," the astronomer continued. "You didn't give me a chance to tell you. The Angstrom units for the three lines. Let me read them to you: 500; 4952; 3720."

It took Steve a perceptible second to grasp what he had heard. Then his heart spun like a pinwheel within his breast. He could hardly breathe. "You don't know what you're saying." His voice sounded strangled. "It isn't so—you're playing a joke—it's——"

"My boy," the older man answered seriously, "the one thing I never jest about is my work. This is my life work, the air I breathe. Thanks to you I've discovered the closest nebula in the universe to us; with a velocity that is almost unbelievable, and showing the spectral lines of new elements. But how did you know? About the new elements, I mean. You've been mighty secretive, Steve, and I've humored you. But now——"

III.

DODD STARED with horrified eyes at the little flask with the green gas, at the mouse that was alive, yet shriveling slowly from day to day, and groaned. His scientific integrity demanded now that he publish the results of his work, no matter what the final outcome.

"I want you to come over to my laboratory right now," Steve said rapidly. "Now! At once! And bring all the data on G 113 with you. It—it's important as hell!"

He could hear Gardner taking a deep breath at the other end. "All right, my boy, if you say so. Be over in half an hour."

It was a fifteen-minute run by motor; but it was almost two-thirty when the doorbell rang. That hour's wait was the longest Steve had ever been compelled to undergo. He paced up and

down the laboratory with quick, jerky steps, eying mouse and gas with alternate stabs. He was in a furious turmoil. Scientific integrity, tremendous discoveries, nations arming, horribly deadly weapon, consequences to humanity—phrases that spun round and round until they were empty of all content, of all meaning.

He jerked like a mechanical toy to the door when the buzzer sounded, flung it open with an impatient gesture. "Good heavens, Gardner," he cried impatiently, "it's about time——"

"Don't bawl dad out," a fresh young voice greeted him. "It wasn't his fault. I dropped in at the observatory just as he was leaving, and insisted on coming along. It took a bit of time to get rid of my friends."

Steve stared. "Deborah! What are you doing out this time of the night?"

"Emulating my elderly parent and the man who thinks he's going to be my husband," she retorted. "There was a party over at Jean's, and you were here, so I went on my own."

She was slim and petite, and the laughter glinted always in her eyes. Steve felt the tired lines around his mouth relax at the sight of her. "All right," he yielded a bit ungraciously. "If you're here, you're here. Though I would have preferred——"

The tall, slightly stooped, quizzical figure of Samuel Gardner followed his daughter in. Under his arm he held a leather portfolio.

"I told her the same thing, Steve," he groaned. "But you ought to know by this time——"

"He does," Deborah retorted. Her eyes roamed alertly around the laboratory, came to a dead stop on the glass tank in which the mouse lay silently. "This early morning conversation have anything to do with that little dead animal?"

"Plenty," Steve said in quiet despera-

tion. "And he's not dead. Let me see those plates, please, and your data."

Gardner opened his portfolio without a word, spread them on the table. Steve studied the spectral lines against the standard comparison plate, checked rapidly through the calculations in deathly silence. Deborah sensed from the strained attitudes of the men that she had inadvertently muddled into something important, and she was level-headed enough to make herself as unobtrusive as possible.

Steve finally raised his head. "It checks," he said wearily. Gardner stared at him. There should have been exultation, the thrill of some startling new discovery in his voice; instead, there was something akin to despair.

"If you wish to tell us," he started very quietly——

"Of course. I need your advice. Listen!" And for half an hour they listened while Steve poured out the story; father and daughter, engrossed, not seeing even the slow-shading dawn light over the quiet street outside.

"So you see," he concluded finally, "the dilemma I'm in. It isn't a question of fame and glory with me, heaven knows. I've synthesized a new air, a multi-ionized mixture of oxygen and nitrogen, and it's what I've called pseudonebulium. And lo and behold! Along comes a nebula, composed of that same deadly atmosphere, the only one of its kind in the universe. Scientists will want to know about those three lines, a shade of ionization under that of true nebulium. I hold the secret. What shall I do?"

"I say destroy it," Deborah answered promptly. Her eyes were wide on that motionless mouse. "Civilization is at a low enough ebb as it is. The world is preparing for a new era of slaughter. Put this new weapon in the hands of unprincipled men, and they will destroy humanity. You yourself say only lead will resist its penetrating powers. There

isn't enough of the metal in existence to protect all humanity. Think, Steve, of millions of men, women and children, lying in a coma like that poor beast, shriveling away slowly, while nothing can be done to save them. A living death, far worse than actual annihilation."

Steve's eyes were grim. "You're right, Deborah," he said slowly. He moved quickly toward the fatal flask.

"Just a moment," Gardner's voice rang out. Steve swung around in surprise. Deborah cried desperately: "Father, don't let your scientific ardor run away with you. Don't you see what this particular discovery means?"

"I see everything, only too well. But Steve mustn't destroy that flask of gas, or the mouse. They both are infinitely valuable."

"Why?"

"I did not tell you, Steve," the astronomer said heavily, "because the data is still too fragmentary for accuracy. But now, under the circumstances, I must. At the terrific speed G 113 is traveling, its path through space may be considered for its relatively short distance from us as a straight line. From the two observations we already have, it looks very much as if"—he paused and took a deep breath—"as if it might pass very close to the solar system. But," he added hastily, "I'd need another observation, at least a month from now, to trace its course with real accuracy."

Deborah said, "Oh," very faintly. Lines etched themselves around Steve's eyes. He nodded, as if certain inchoate fears had been confirmed for him. "By close you mean of course a direct hit on our system," he said evenly.

"I didn't say that," Gardner answered quickly.

"You didn't have to." Again there was a deathly silence in the laboratory. The quiet dawn filtered slowly through the window, but no one noticed it.

It was Deborah who finally broke the

unbearable weight of their thoughts.

"But father," she protested, "isn't it true that the earth has passed more than once, right through cometary tails? I remember reading that in 1910 we were literally enveloped by Halley's comet."

Gardner lifted his head—hopefully. "That's true," he murmured excitedly. "I had forgotten."

"And cyanogen is definitely known to exist in the spectra of comets," she continued quickly. "You wouldn't want a more deadly gas than that. Yet no one in the world died, or suffered the least inconvenience. Now comets' tails are rare enough—I understand that they are thousands of times less dense than our atmosphere at sea level, but I've also read that the density of the average nebula is considerably less even than that. It runs as low as ten to the minus seventeenth power that of the sun, or about a millionth of the best vacuum we can produce on earth. Isn't that so, dad?"

GARDNER jerked his head in quick affirmative. His eyes glowed proudly on his daughter. "Quite right, Deborah. While G 113 seems more compact than the average nebula, yet I doubt if it is much more dense than the tail of a comet."

"Then," she burst out triumphantly, "what is there to worry about?"

"I used," observed Steve with strained deliberation, "a single drop in the form of an unbelievably fine spray on that mouse. It diffused through a five-gallon tank against air resistance. That is a pretty good approximation of a vacuum."

The hope died in Gardner's eyes. He squared his stooped shoulders. "There is only one thing to do, my boy. Publish our results. Warn the world. Furnish qualified scientists with the gas in the hope that they may find a neutralizing agent in time. And pray that my first rough calculations are inac-

curate; that the nebula will swing outside the solar system."

THE LATE afternoon papers carried the headlines.

"FAMOUS ASTRONOMER AND NOTED CHEMIST WARN OF LETHAL NEBULA. PREDICT DOOM OF WORLD UNLESS ANTIDOTE FOUND. SCIENTIFIC BODIES MEET HURRIEDLY TO EXAMINE PROOFS."

The cables took up the tale, the radio crackled frantically through the ether, until, by the second day, not a nook or cranny of the civilized world but knew of the Cassandralike prediction.

By evening Steve's laboratory was a beleaguered fortress. The street outside was black with reporters, clamoring to the heavens for interviews. Sirens screamed as motorcycles cleared the way through heaving humanity for worried scientists, sceptical scientists, and just frankly curious scientists in search of data. The pronouncements of such a combination as Gardner and Dodd were not to be treated too cavalierly.

It was long past midnight before the clamor had subsided and the house cleared of visitors and barricaded against further intrusion. Steve was hoarse and his eyes bloodshot from much explaining; Gardner's shoulders sagged even more than usual. Only Deborah seemed as fresh and neat as if she had not been up for two days and a night.

The mouse had been studied from every angle, the flask with its deadly contents examined with respectful attention, and the spectra and astronomical data pored over with immense interest. The last was something definite. There was no question about the position and unusual velocity or of the pseudonebulium in its composition.

Only one thing did Steve refuse, po-

lately but firmly, to disclose—the method for manufacturing the pseudonebulium. Inquisitive glances thrust surreptitiously toward his apparatus, toward the De Graaf machine, but Steve was not worried. The synthesis was a matter of complicated and laborious steps, and not to be fathomed by mere cursory glances.

IV.

THE THING was a nine-day wonder. The newspapers played it up sensationally; the Sunday supplements spread themselves with faked, synthetic photographs of cities choking under the effects of thick-billowing nebular gases. The magazines printed long interviews with prominent scientists. Apprehension rustled over the earth. Men looked up to the heavens for almost the first time in their lives, seeking in vain the tiny blob of light that might mean their ultimate destruction. It was of course as yet invisible except to the lenses of powerful telescopes. Scientists, medical men, furnished with minute samples by Dodd, busied themselves with the effects of the gas on animals, while a ceaseless search for an antidote went on in a hundred laboratories. Thousands of mice and guinea pigs and rabbits were offered up to the cause.

And everywhere, the animals lapsed into their coma, and wasted away gradually, the living dead, oblivious of all attempts to bring them back to normal life. The scientists were of course interested in the new discoveries *per se*—the astronomers over the onrushing nebula with its speed that had been heretofore associated only with the great nebulae of the extra galactic universes; the physicists were agog over the multiple-ionized air; the biologists and medical men over the deadly effects on life forms.

But the man in the street was vitally interested in just one speculation, and

justly so. Nothing else mattered to him. If the nebula were to sweep through the solar system, and plunge all humanity into the strange, wasting coma, what profit then the ardors of pure science?

For a few days then the world suffered a bad case of jitters. Even the preparations for war ceased. Then seeming sanity returned. The official announcements of international bodies of scientists were calculated to have a soothing effect. In the first place, the data on the onrushing nebula was as yet too scanty for a prediction of its course with anything like accuracy.

To this, Samuel Gardner promptly subscribed. He pointed out that he had ayowed as much in his very first statement. Then, too, Deborah's initial arguments had been taken almost verbatim by the scientists of the world as their own. Granting even a direct hit, it was argued that, aside from certain possible auroralike effects, the earth would not even know that the nebula was upon it. Concentrations were calculated, vacuums were learnedly discussed. Old files on Halley's comet and other earlier envelopments were resurrected and published to the world for its reassurance.

The excitement died. Men even began to laugh good-humoredly over the recent scare. Jokes sprang up like mushrooms, in which nebula and nervous scientists appeared in ridiculous lights. The reputations of Dodd and Gardner suffered irretrievably from their published warning. The rumor spread that they were notoriety seekers; that somehow they had intended to profit by throwing mankind into convulsive fear. Life flowed on an even keel again. The interrupted preparations for war renewed at an accelerated pace. The nebula was forgotten. Astronomers watched it carefully, of course, but that was their professional business.

But in a certain chancellery in Europe the matter was not permitted to drop so

easily. The War Lord, resplendently military in Nile green, was in conference. Close-cropped heads bent over outspread maps.

The War Lord raised his head. There was an eager gleam in his feral eyes. "Good!" he jerked out in staccato fashion. He loved to clip his speech. It sounded so military. "The fatherland is ready. We will strike, there—and there—and there." His blunt finger passed rapidly from red-inked frontier to frontier. "Troops, tanks, planes, everything is prepared."

"Everything," echoed his councillors.

The War Lord drummed rapidly with his fingers on the table. He frowned. "It will not be easy," he admitted, half to himself. "Our spies report the enemy is also prepared."

A swarthy man in the much-decorated uniform of a general said confidently: "It is not necessary to worry. Our troops are filled with patriotic ardor. They will be irresistible."

"Hmmm!" The leader seemed doubtful. He pressed a buzzer suddenly. An aide swung open the door, sprang to attention. "Show Bollman in."

A little man entered. His eyes were bright and birdlike, and his mien was humble in the presence of the dreaded War Lord.

The dictator fixed him with a cold, penetrating stare. He loved to see the scientist cringe before him. It inflated his ego; it soothed the involuntary feeling of inferiority he possessed in the presence of those who had brains.

"That gas the American discovered," he commented abruptly. "It works?"

The little man bowed deeply. "It does. Even as the American, Dodd, has stated. One hundred monkeys, two thousand rabbits, two lions, a tiger and an elephant are in comas induced by one cubic centimeter of the gas which I sprayed into the sealed and leaded enclosure of the zoo. They dropped,

highness, as if felled, and they have not moved since."

"And there is no cure?"

"None whatever. Our staffs have tried; all over the world the laboratories are busy, without result."

"And what use," pursued the War Lord, "could be made of this gas in war?"

For the first time the scientist permitted his head to lift. His voice held a confident ring. "A dozen bombs, filled with pseudonebulium, dropped from a single fast plane over the largest city in the world, would release enough gas to place every man, woman and child in the area into the coma. Hiding in the deepest cellars, behind the thickest walls, could not save them. Only lead is impenetrable to its influence, and lead chambers to house millions, are—well—" He smiled significantly.

THE DICTATOR glanced sharply around the circle of his advisers. Suppressed excitement was in their eyes, expecting only those of the general. He was a firm believer in *Massenmensch*, in the massed attack of countless hordes of men backed up by heavy artillery. Gas and such were mere toys, fit only for impractical theorists.

There was a faint grin of triumph on the War Lord's face as he swung back to the respectful scientist. "Good!" he clipped. "Within ten days you are to have ready a sufficient supply of this gas to fill ten thousand bombs—leadén bombs." The fingers of his right hand ran rapidly over his left, as if he were ticking off the number. "London! Paris! New York!" Satisfaction creased his smug features. The world was already at his feet. He, that once had been the digger of ditches, was smarter than those who had sneered at him! He had brains enough to avail himself of even the nebulae in the heav-

ens, while his enemies, with their snob-bish superior culture—

The little scientist cringed. Alarm sprang into his beadlike eyes. His hands made helpless fluttering motions.

"B-but, highness," he stuttered.

The War Lord descended rapidly to earth. He frowned. "Well, Bollman, what is it?" he demanded ominously.

"We—we can't get that much of the gas," the scientist managed to gasp.

"Why not?"

"Because, highness, we do not know how to make it. We have tried, and tried, but it is so far impossible."

The face of the dictator suffused with red. A dangerous sign. He took a step forward. "The American has done it, has he not?" His tone was deadly.

The scientist went white. "Yes, highness," he breathed hard, "but he has not told how. And no one else in the world has duplicated his method. He gave samples to our laboratories, but there is only half a cubic centimeter left."

The War Lord seized the terrified little man, shook him until his teeth chattered. "Stupid ass!" he screamed. "What good are you? You can't find the secret, eh? An American, a pig of an American, is smarter than you are, is he? Go back to the laboratory, and make me that gas within ten days, do you hear?" He flung the scientist away from him, stood there in apoplectic fury.

Bollman fled to the door. "Yes, yes, highness," he choked. "Your will is law. It shall be done." And he was gone, stumbling in his eagerness to get away.

The dictator rubbed his hands, smiled. "There!" he bragged, sweeping his eyes arrogantly over the motionless figures of his councillors. "That is the way to do things."

There was a hasty murmur of approval. But the minister of propaganda, unofficially known as the "brains" of the

War Lord, remarked dryly: "Science is a coy mistress. Not even for your highness does she disclose her secrets on mere command. The ten days will pass, and Bollman will feel the sharp edge of the ax on his neck, but you won't have the gas. There is another and a more practical way."

"What is that?" the dictator demanded uneasily. He hated the minister of propaganda, resented his calm superiority, but he needed him.

"Buy the process from the American. Offer him money. No American has ever refused money," he answered cynically. "It is their god!"

"You are right." The dictator clenched his fist, pounded the table. "That will be your job. Offer him a million, ten million! Kidnap him, if necessary. With that gas, gentlemen, we rule the world!"

Two weeks had passed since the first preliminary announcement. The tumult had died. The eyes of the world had swerved to the threatening situation in Europe. All pretense at concealment had been contemptuously cast aside. The nations were ready, eager, under the lash of skillful propaganda, to surge at each other's throats. Bollman was dead, executed secretly as a traitor to the fatherland. The ten-day grace period had expired, and the requisite process had not been forthcoming.

Then there were other matters to divert the attention of humanity. Important, all-absorbing matters. A beautiful woman had killed her lover in Paris. The scoundrel had expressed a desire to return to his deserted wife and three children. The trial was on. The jury craned and almost broke their necks to see the defendant's shapely, crossed legs. They grinned lewdly at the lawyer for the defense—a clever man—read certain very passionate letters with unctuous, sly meaning. The courtroom was wired for broadcasting so that every detail could be carried on

the wings of modern inventive genius to the tiniest tot in the land.

In England it was Jubilee Year. The King and Queen, the Prince of Wales, and all the little princelings, showed themselves time and again to a never satiated nation. The tableaux were terrific, the crush almost as bad. The papers boasted of the number of loyal subjects who fainted or suffered severe injuries in the mighty throngs.

In Germany there was scandal. Some one had dared accuse the leader of having non-Aryan blood in his veins. More, he had documentary evidence to prove his thesis. The nation rocked to its foundations. But the matter was soon satisfactorily explained. It had been all a mistake. The documents related to a man who had despicably assumed the leader's name at birth, in expectation of this very vile attempt to besmirch the leader's purity. He had been protectively removed, so had the accuser, so had the documents. Everything was lovely again.

Russia had no scandals. They were not permitted. But they were in the throes of renaming every city, town and village in the country. This evoked violent discussions, accompanied by the interminable drinking of tea. Some doddering oldsters insisted that Lenin should be similarly honored. At length a compromise was reached. A tiny village of some sixty souls, including pigs, cows and chickens, was formally christened Leningrad, and every one was happy.

But in the United States there was the Irish Sweepstakes. By a stroke of genius the hospital authorities had tied it up with the chain-letter craze. Mail a ticket to the top of ten names on the list, cross him off and add your own at the bottom. Eventually, with the patient aid of the mail carriers, over a thousand tickets in the great lottery would return to you, increasing your chances of success just that much. The

lottery officials chuckled and took in millions of dollars. Every one was in it, from bootblacks to captains of finance. There was no other topic of conversation. A president was elected almost without an engrossed nation knowing that there had been an election. Not half of the people could tell you the new incumbent's name.

V.

NATURALLY, a nebula somewhere in space, that could not even be seen, about which some fool prediction had been made, was pushed out of the way. It was as dead as last year's best seller.

There was one place, however, where it was still a matter of grave importance, even in the face of these world-shaking events. That was the laboratory of Stephen Dodd. Gardner had obtained a new set of observations. G 113 was the order of the tenth magnitude now and shifting its coördinates rapidly.

"I am afraid there is not much chance of its missing us," he told Deborah and Steve gravely. "It is still an approximation, but——"

He stopped. There was nothing more for him to say. Steve cast Deborah a quick glance. "When do you think the collision will take place?"

"If it does, it would be in about six weeks from now."

Deborah cried out: "Dad! Steve!"

Six weeks between them and possible annihilation. Six short weeks for love and laughter and the warmth of human relations!

Steve clenched his fists desperately. "The fools!" he groaned. "Six weeks between them and death, and they won't believe." He flung open the window. "Look at them now; going about their silly tasks as if all eternity were ahead of them."

The street was thick with traffic. Autos moved in a solid queue; pedestrians dotted the sidewalks, intent and

hurrying; the human ant heap buzzed and swarmed.

"Don't blame them," Deborah said quietly. "It is not their fault. They've been told by the scientific societies that there is no cause for alarm; that you and dad are either mistaken or charlatans."

Steve swung away, paced the laboratory with hurried steps. "If only the entire world threw everything else aside, devoted all the resources of civilization to the problem, a safeguard, an antidote might be found in time; and manufactured in sufficient quantities to save at least a sizable portion of humanity. Even lead chambers——"

"Would be of small value," Gardner pointed out. "There is not that much lead in the world. And furthermore, one could not live indefinitely in lead. Lord knows how long earth's atmosphere will be permeated with the deadly gas!"

Steve stopped short in his paces. His eyes glittered with feverish intensity. "At least," he cried, "we can make the attempt. We are men, not animals to await extinction with helpless fatalism."

"What would you do?" Deborah asked.

"This! Get together a choice group of scientists, those whom we can convince. Work night and day on an antidote, build ourselves a lead-lined house, capable of being hermetically sealed, equipped with oxygenation apparatus, stored with food. Perhaps——"

"That will cost money, lots of it," the practical astronomer interposed. "I have none; you've used up all your grant from the Lauterbach Foundation. In the face of the unfavorable publicity we've received, no man of wealth would dream of financing us."

Despair settled on Steve's face. "You're right, Gardner," he acknowledged heavily. They looked at each other, the two men and the girl, feeling

the future of mankind to rest on their precarious shoulders—a mankind that heeded them not and had already forgotten their very existence.

The doorbell rang—sharp, impatient, ominous. Deborah moved quickly, opened the door. A dapper, dark-faced man stood a moment in the doorway, then entered with a courteous gesture. His clothes were expensive and of foreign cut; his face was saturnine and slightly alien. His quick, dark eyes flitted rapidly around the room. His black sleek hair was heavy with pomade and curled slightly up at the corners of his temples.

"Like Mephistopheles," Deborah thought.

"Pardon me, my dear lady," he bowed and smiled. His English was impeccable, yet tinged with alien intonations. "I wish to have the honor to address myself to Mr. Stephen Dodd."

Steve stepped forward. "I am he. What do you want?"

"Ah!" The man's eyes rested with some astonishment on his youthful, powerfully built figure. These Americans were a strange breed. This young man should be an army officer, not wasting his time in potterings around laboratories. He shrugged his shoulders slightly. He had a mission to perform.

"It is an honor, sir, to meet you." He smiled expansively. "My business, is unfortunately, of a delicate nature, and requires—you understand—"

"We have something to take care of in the lab," Deborah said sweetly. "Come, dad!" She linked her arm in his, steered him out. The man's eyes followed her admiringly. Ah, the American women were pretty! Then they came back, focused sharply on Steve.

"This, sir, is my business. I need not inquire if you are in need of money. All Americans are, are they not?" And he laughed heartily.

Steve felt a vague dislike for the man.

But his ears prickled. Money, had he said? And how he needed money right now!

"I could use some," he admitted cautiously.

"Good!" the man said with an air of satisfaction. "Sir, I am authorized to offer you the sum of one million dollars in cash, immediately."

For a moment the room swayed around Steve. One million dollars! Was the man mad or just a practical joker? With an amount like that, he could—

Steve snapped out of it. "What's the catch?" he demanded.

"Catch?" His visitor seemed puzzled, then he smiled. "Ah, I know. One of your very charming Americanisms. There is no catch—as you call it." He inserted his hand in his inner coat pocket, took out an embossed leather wallet, spread it open, and delicately removed a check. He smoothed it out before Steve's astonished eyes. It was for one million dollars, payable to Stephen Dodd, Esq., drawn on the City National Bank of East Haven, and certified. Steve recognized the certification as genuine. His own very modest account was with the same institution.

IN A DAZE he heard the smooth voice of the tempter. "It is yours, my dear sir, in return for one very small thing."

With an effort Steve controlled himself. "And that is—"

"The exclusive rights to the secret of the manufacture of pseudonebulium. That is all. Nothing else. Not even your services will be required. Quite a satisfactory arrangement, is it not?"

Steve's head cleared. He was instantly wary. "I don't know," he said coldly. "It depends. Whom do you represent?"

The man seemed surprised. "Does it matter? One million dollars is exactly

the same amount whoever offers it to you."

"Perhaps," Steve fenced. "But I don't sell unless I know the buyer."

"Even if the amount were raised to two millions?" the emissary asked insinuatingly.

"Not even for ten millions."

The agent of the minister of propaganda felt the blood rush to his head. What manner of fool was this American? It was maddening. He had received positive instructions not to disclose his superiors, but one look at this most surprising imbecile convinced him that he was up against an insurmountable obstacle. Terror seeped through him. He knew what awaited him if he returned with his mission unfulfilled.

He took a desperate breath, clicked his heels smartly. "It is for his highness," he saluted as he spoke the dread name, "the War Lord!" He dropped his hand, opened his wallet again, and took out another check. The fabulous figure danced before Steve's eyes. It was for ten million dollars!

Ten million dollars! His life, the life of Deborah, of this smooth-smiling tempter who stood before him, of the entire world, nestled in the crinkling folds of that oblong stretch of paper. A vision swam before him of the magic ink changing, by a sort of fierce alchemy, into a swarm of laboratories, into a thousand doctors, chemists, biologists, working night and day, seeking, searching, for the antidote that must exist, somewhere, locked in the secret recesses of plants, of trees, of drugs, of strange combinations of chemicals. Six weeks! What a pitifully short time!

Then the vision faded. It was a dream, an illusion. The War Lord desired his process. It was to be an outright, exclusive sale. The corners of his mouth tightened. He knew what that meant. He knew the particular brand of idealism his highness affected.

Pseudonebulium was a frightful weapon of destruction, was it not? In the hands of the War Lord—

What did it matter which way the world went to destruction—the hellish way of bombs dropping from fast planes, or the way of impersonal forces? His shoulders straightened. His face was grim and hard. If the world must necessarily become a mausoleum for the human race, let it be without the intervention of man's bloody hands.

The agent read the look rightly. It was a refusal. But he misunderstood the cause. He said hastily: "Ten million is the maximum I am authorized to offer."

Steve fought to steady his voice. "A million would have been enough," he said in cold anger.

The emissary felt perspiration bead his dark smooth forehead. Had he overbid in his anxiety? Had he—

Steve stepped close to him, fists clenched, lips writhing contemptuously. "Go back," he lashed out, "to your master. Tell him the process is not for sale. I know to what despicable use he intends putting it. Tell him I'd rather see all humanity extinct under the nebula than give him even the fleeting satisfaction of strutting as the ruthless conqueror." The young scientist laughed harshly. "Tell him in six weeks time we'll all be dead because he and all the other fools like him refuse to believe our warnings. Now get out!"

The man moved back a step from this insane American. He was desperate. Already he felt the ax on his slender neck. "I'll raise it to twelve million," he cried.

Steve clenched his fists. "Get out!" he repeated.

The agent stared at those capable hands in fright, and backed hastily out through the door. It slammed behind him with a definitive crash. For an instant he stood rooted to the ground,

heedless of curious passers-by, staring at the obdurate door that meant his very life. Then he smiled faintly. It was not a pleasant smile. He knew certain compatriots of his in this town, men who would do the bidding of the War Lord. He hailed a taxi and drove rapidly away.

Inside the laboratory, Steve was writing furiously at his desk. He barely raised his head at the entrance of Deborah and her father. Six weeks! Six weeks! The words patterned themselves over and over in his brain as he wrote. The letters piled high before him—five, ten, twenty. Desperate appeals to certain picked scientists, scattered over the world, with whom he was personally acquainted. The letters bristled with arguments and mathematical computations of the deadly penetrative power of pseudonebulium, and invited them to come posthaste with their families to East Haven, together with all the cash at their disposal.

And high overhead, still unseen to the naked eye, a vast cloud of tenuous gas, millions of miles in diameter, was rushing with terrific speed through the cold reaches of interstellar space; a colossus, intent on its victim—a certain small red sun and its attendant train of nine circling planets.

VI.

THREE WEEKS LATER, a handful of people gathered in the living room of Stephen Dodd's house. Only a few had responded to his appeal. There were Samuel Gardner and Deborah of course. Also Dr. George Cunningham, Steve's friend, a round, jolly medico with a bald, pink expanse of forehead. Dr. William Clay, tall and pale and thin-lipped, an authority on glandular secretions and hormones, with his stout, comfortable wife and two little children, a boy and a girl. Henry Claiborne, the biologist, known the world over for his

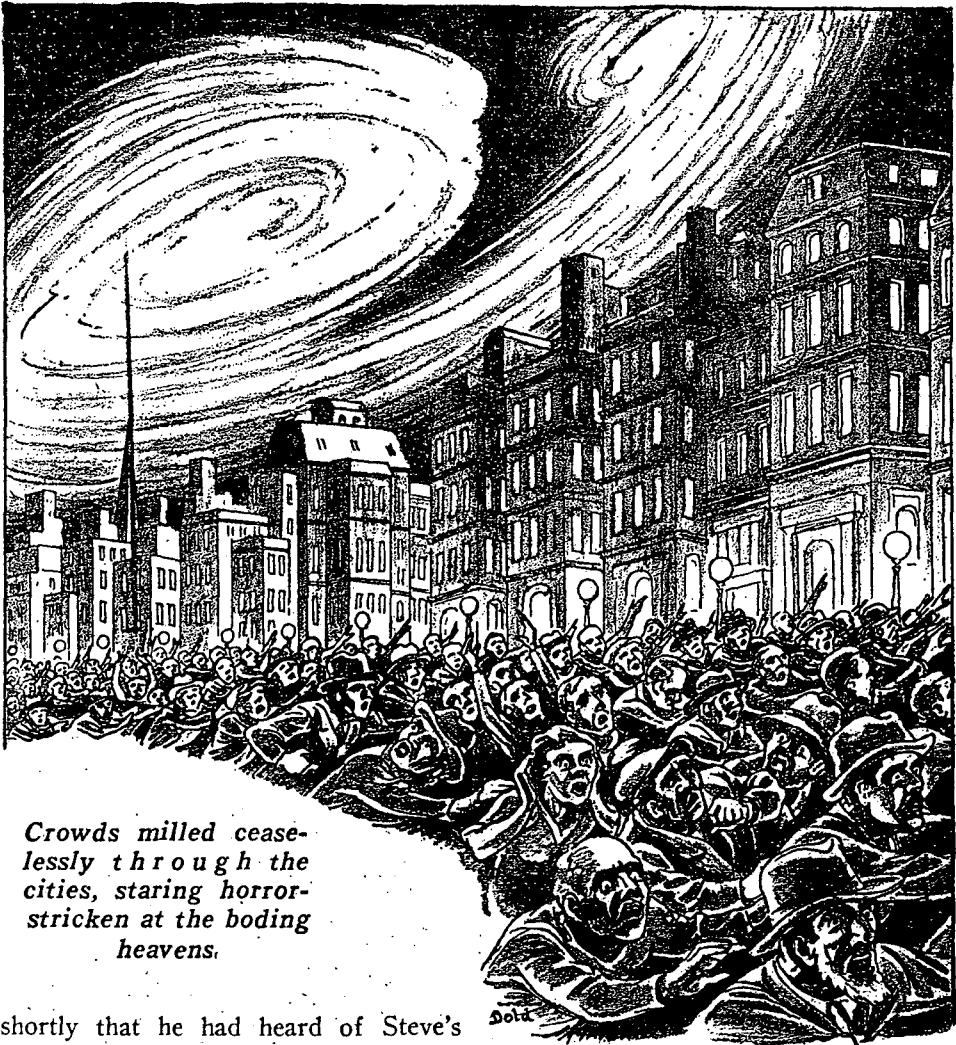
work on the genes of inheritance and the mechanism of the cell.

His weak, near-sighted eyes were eternally adoring the platinum blonde, sinuously curved ex-chorus girl whom he had somehow married. But her calculating gaze, sheathed by long, mascaraed lashes, appraised the men in the little gathering with interest, and lingered longest on the clean-limbed body of their host. As for the women, she dismissed them with casual contempt, except for Deborah. Their glances measured each other, and Deborah turned away with a queer feeling of dislike for the exotic, empty-headed creature.

Then there was Herr Josef Kuntz, a meek little German scholar, manifestly under the thumb of his massive, man-nish wife. They had four girls, with scrubbed, shining cheeks and thick flaxen hair neatly braided in pigtailed down their backs. It was hard to believe that Herr Kuntz was a chemist whose researches on colloids were classic examples of the scientific method. Monsieur Armand Hanteaux, with his huge black beard and expressive shoulders, was obviously French. It was not so obvious that he had penetrated further into the innermost vitals of the atom than almost any other man then living. He was there alone. Marriage, he proclaimed with Gallic freedom, was an institution for fools. He, Armand Hanteaux, let other men wear the fetters, while he—and his bold black eyes rested admiringly on the seductive lines of Clara Claiborne.

There was only one other in the little company—Oscar Folch, a subject of the War Lord. Steve had heard of him vaguely as a chemical engineer in charge of munitions plants. The fifty invitations that had finally gone out had not included his name. But Folch had shown up with a black hand bag swinging from bony fingers—dark, reticent, a man of few words. He had explained

AST-5



Crowds milled ceaselessly through the cities, staring horror-stricken at the boding heavens.

shortly that he had heard of Steve's plan, that he approved, and had come uninvited. Steve had welcomed him politely. He did not connect the appearance of Folch with the visit of the emissary from the minister of propaganda several weeks before.

Of the fifty, no others had come. Most had not taken the trouble to answer; some had written curt, abrupt refusals, imitating that Dodd was a bit cracked, if not a charlatan. A few had been more courteous in their regrets.

Steve made them a little speech of welcome. They were, he told them, the sole hope of mankind. Their resources were limited, and the time perilously

short. They were leaders in their respective fields, and perhaps, by unremitting coöperative labor, they might evolve an antidote, a defense against the onrushing nebula before it seeped into earth's atmosphere.

"And if we don't?" queried Dr. Clay dryly.

Steve shrugged his shoulders slightly. "*Sauve qui peut*," he quoted. "We must try to save ourselves then. At least humanity shall not become completely extinct. With ourselves as a nucleus, men and women and children, we'd have to rebuild a world."

AST-6

Clay's little girl let out a frightened wail. The prospect did not seem to please her very much. Deborah flushed and held her level eyes steady. Mrs. Kuntz sniffed audibly. Her child-bearing days were over.

Dr. Cunningham groaned comically. "A swell future you're mapping out for us poor bachelors, Steve." But Hanteaux's eyes were hot and admiring on Clara Claiborne. She bridled and shot him a long seductive glance. Her husband glowered at her furiously. It was evidently not the first time she had given him cause for jealousy.

"We save ourselves then," Oscar Folch said thinly. "How?"

It was the first time he had spoken at the meeting, and his voice jarred unpleasantly on Steve. Was there more than a hint of mockery, perhaps, in that thin, creaking voice?

But nothing of that appeared in Steve's tones as he answered. "We'll lead-sheath this house and seal it against the penetrating gas. We'll install air-conditioning apparatus, and store food supplies sufficient for a year. That will be your job, Folch, and yours, Hanteaux."

"I would prefer working with the pseudonebulium," Folch announced calmly.

The blood rushed to Steve's face. He clenched his hands angrily. Gardner saw the explosion coming, and hastened to intervene. "There is one thing we must all understand," he told Folch gravely. "The project can only be a success if there is the strictest discipline. Mr. Dodd is the leader. I cheerfully submit to his orders and so must every one else. It is the only way."

Folch glanced inscrutably around the circle and saw nods of approval everywhere. "Very well, then," he said suddenly, and relapsed into his former silence.

Hanteaux rumbled in his beard. "A praiseworthy idea, Monsieur Dodd.

That is, if the nebular gas does not make the earth's atmosphere permanently poisonous. But what you ask for is expensive. Have we perchance a Croesus in our midst?"

Steve frowned anxiously. He stared at the taut, intent faces about him. "I've figured the costs," he said slowly. "It will take about a hundred thousand dollars. I have exactly seventy-four hundred dollars, including all spare equipment that I've already sold. Gardner, how much have you?"

The astronomer blinked. "Nine thousand, which includes three months' salary I managed to persuade the board to advance."

"And you, Dr. Cunningham?"

The rotund doctor grinned. "Besides my stethoscope, and an inestimable education which cost my late venerated father some twenty thousand, I have exactly six hundred and twenty dollars and thirty-four cents."

Herr Kuntz looked bewildered. "I have maybe a few dollars yet. It cost all my savings to bring my family here." Hanteaux rumbled something about several thousand; Claiborne was the wealthiest, with ten thousand; Dr. Clay had a little less. Steve figured quickly. So far the total was about forty thousand, and there was only Folch to hear from. He turned inquiringly to the engineer from the realm of the War Lord.

Folch shook his head sardonically. "I have," he bowed precisely, "my traveling bag—nothing else."

A tense silence held them. Even Clara Claiborne felt the weight of the situation and stopped her ogling. Then Steve's jaw snapped tight. "That means the 'safety first' idea is out. We'll use every cent of it on the finding of an antidote. Time is short, gentlemen. We'll get to work at once."

Not for a moment did the idea enter his head that, with the elimination of those without funds, notably Herr

Kuntz, his wife and four scrubbed children, Dr. George Cunningham, and the uninvited Oscar Folch, there would be sufficient funds to build a smaller retreat for the moneyed people.

Deborah felt the thought flash through her mind, and dismissed it with a shudder. She was more proud of Steve than ever before. They would live or die together, all of them. Those poor little girls with their shining faces and serious, pigtailed expressions! But she saw the sudden, hard, calculating look on Clara's face as her blue eyes flitted over the moneyless ones. The feline beauty turned to her adoring husband. "Darling!" she gushed, "I don't see why we——"

"That's enough, Mrs. Claiborne," Deborah flared quickly, eyes sparkling with anger.

"But——" Clara started.

"You heard what Mr. Dodd said," Deborah repeated firmly. "His plan is final."

Henry Claiborne stared bewilderedly from his wife to Deborah, and back again. "I don't understand——" he protested.

But his wife did. She shot a look of unutterable hatred at her antagonist, bit her lip until the marks showed white against the carmine of her lipstick, then smiled sweetly at the nearsighted, blinking biologist.

"It is really nothing, Henry, darling," she cooed.

VII.

THEY STARTED at once. Not an instant could be lost. There were only three weeks in which to discover the antidote. Steve divided the work with swift precision. He took sole charge of the manufacture of the pseudo-nebulium to be used in the experiments. A vague, uneasy feeling made him more secretive about the process than ever before. Not even to Gardner, his fa-

ther-in-law-to-be, did he disclose it. He shut himself up in the special laboratory, and permitted no one to enter its precincts. Several times he caught Folch in close proximity to the door with its intricate lock, but always he had a sufficiently plausible excuse for his presence.

The two doctors, Clay and Cunningham, as well as the biologist, Claiborne, worked coöperatively and with feverish intensity on the effects of the gas on a hundred newly martyred mice. In the laboratory, Claiborne, his uxoriousness forgotten, was a totally different man. Quick, accurate in his movements, precise.

Herr Josef Kuntz also sloughed his meekness. Chemicals flowed under his expert fingers in unending combinations, each carefully ticketed, and immediately forwarded to the biologic lab for injection into the quiet, unmoving mice. The original mouse martyr was nothing but skin and bones. Claiborne was positive that the spark of life still flickered somewhere in that emaciated frame; Clay was just as positive it had vanished completely.

Oscar Folch, in his engineering capacity, built apparatus as it was required by the others. There was no question that he knew his job thoroughly. He rarely spoke, but his eyes darted ceaselessly and inscrutably over every nook and cranny of the three-story building in which they were housed. Without quite knowing why he did it, Steve, after meeting his dark, mocking gaze, invariably turned back to his manufacturing chamber to make sure that the door was locked.

Gardner remained at the observatory for constant vigil at the telescope, coming to Dodd's house only to sleep and report. There was no question about it now. G 113, the runaway nebula, had grown to the order of the fifth magnitude, and was faintly visible to the naked eye on moonless nights as a patch of wan light near Sagittarius. It was

only some twenty billion miles away now. At the tremendous speed with which it was traveling—15,000 miles per second—it would take only another fifteen days to engulf the solar system.

The observations were sufficiently extensive by this time for accuracy. There would be a direct hit. Gardner's figures agreed with those of other astronomers. The observatories of the world were excited over the approaching nebula. But none of them felt any untoward alarm. They announced comfortably that aside from a certain luminescence in the heavens, there would be no other effects. Their calculations, again tallying with Gardner's, proved it to be more tenuous than a comet's tail. What was there to worry about, then? The gray-haired astronomer came in for a good deal of joshing from his associates; the newspapers made merry over the immured scientists and their families in Dodd's house. "Noah's Ark," it was dubbed, and the name stuck.

Yet even so, the onrushing nebula rated headlines in the papers. After all, it was the first to penetrate the solar system. Scientists prepared delicate apparatus to examine and probe the innermost secrets of the strange visitant. It would have received far more attention had not the War Lord, tired of waiting, commenced his long-heralded attack. Bombing planes smashed huge cities, sent long streams of refugees—those who survived—into panic-stricken flight. Heavy artillery thundered; great tanks lumbered like monstrous caterpillars over shell-torn landscapes, poison gas enveloped hundreds of miles in a dense, searing pall. Millions of men, grotesque in gas masks, hurled like gray ghosts through the poisoned atmosphere, locked in furious combat. Nation after nation tumbled into the maelstrom. All Europe, all Asia, was aflame with battle and sudden death. Only America as yet was aloof from the turmoil.

Naturally, the nebula, now grown to

a silver disk of light, was unimportant. Steve groaned and harried his little group to even more furious efforts. Only a week remained, and nothing—absolutely nothing had been accomplished. Hanteaux forgot to stare boldly and lecherously at the quivering charms of Clara Claiborne. His great beard almost immersed itself in the whirring apparatus he had evolved and Folch had constructed. He was attempting an electrical approach to pseudonebulium, to see whether it could not be deionized into normal, innocuous air by tremendous surges of current. But the strange gas was unusually stable, and its multiple ionization resisted all his efforts. The women, under Deborah's leadership, purchased supplies, prepared meals, ran the house, assisted their menfolk in the laboratories.

Funds were running low. Equipment was expensive and ate rapidly into their modest account. Steve tried desperately to interest certain men of wealth, offering them dazzling visions of being the possible saviors of humanity, of saving themselves in any event. He was laughed at, and dismissed with mocking words. He was a charlatan—the papers had said so. He and his associates at Noah's Ark were crazy predictors of the end of the world—and besides, there were immense profits to be had in the sale of munitions and supplies to feed the holocaust on the other side.

STEVE returned wearily from a last fruitless appeal. It was night. The nebula was plainly visible now, a shimmering flash of light across the horizon. Four more days! He shuddered. He thought of Deborah, with her steady, tender eyes, and felt sick, all over. There had not been any time for love making. And in a few days—

There were the others too; the rest of mankind. He stared with strange intensity after the people as they hurried about their petty affairs, as though

he had never seen them before. He tried to vision them all, moveless, shriveling slowly, as the mice had done—were still doing. Then his mood changed. A fierce anger gnawed at his vitals. Half the world was engaged in insane slaughter, for no other purpose but to feed megalomaniac ambitions. They laughed at him and his warnings, refused the very small sums, the co-operation that might have saved them all from a dreadful fate.

They were not worth saving, he cried aloud. A man stopped a moment, looked at him curiously. Steve moved on hurriedly. He must be in a pretty bad fix, he thought, if he began talking to himself.

At the laboratory, they huddled around him. He did not have to speak. They saw from his face that he had met with no success. It had been his last hope. To-morrow it would be too late.

Without a word Deborah came to him and put her slender hand in his. "Never mind," she whispered. "You'll manage it somehow."

He squeezed her cool fingers, shook his head soberly. "I think I'm on the right track," he said. "It's only a guess, of course. But there are certain very rare and expensive chemicals that I need. We haven't money enough to buy them. Money!" He laughed bitterly. "Trash that will be less than meaningless in four days."

Dr. Cunningham said quietly. "What do you need?"

"Three grams of radium sulphate, half a kilo of metallic scandium, a tank of krypton, and two kilos of lutecium chloride. Almost fabulous stuff. Kungesser's the only place in this country that carries a supply. They quoted me, after much scurrying, eighty-five thousand dollars for the lot. Might as well ask for the moon."

Dr. Cunningham said even more quietly. "You'll have it by to-morrow morning." For once in his life the jolly

grin was gone from his rotund countenance.

A babble rose hurriedly. Gardner expostulated. "But how in Heaven's name, George—"

Cunningham cut him short. "Never mind. I said to-morrow morning." Without another word he left the room. They heard the front door slam, and he was gone.

Steve shrugged his shoulders. "Poor George! The strain's been too much. In any event, to-morrow's too late. The reactions I've calculated will take four full days, and midnight is the deadline. After that each hour, each second even, will be just about that much after the nebula envelops us."

Folch smiled for the first time. It was not a pleasant smile. "I think," he remarked thinly, "I can provide you with what you need, with money enough for all the experimenting in the world, within half an hour."

They stared at him. Steve's head snapped up. "What's that?" he demanded.

Folch repeated carefully what he had said. "I can offer you up to ten million," he stated calmly.

There was a sensation. Memory struggled in the back of Steve's mind. That was the exact sum with which the agent of the War Lord had tempted him.

Anger flared in him, burned down. He eyed the spy grimly. "And all you want in return is the method for manufacturing pseudonebulium, isn't it?"

For the first time Folch betrayed emotion. He fell back, caught off balance. "Why, how did you know?"

Steve laughed harshly. "Your fellow spy offered me the same amount weeks ago. And I turned him down. Now go back and tell your master—"

But Folch had recovered himself. "I don't know what you're talking about, Dodd," he stated evenly. "I received word from a friend of mine, a million-

aire in my country, only a little while ago. He is willing to give me that sum, but naturally he drives a bargain. He wishes to manufacture the gas for certain reasons——"

"Your millionaire is the War Lord," Steve broke in furiously, "and I know his reasons quite well. His dreams of conquest aren't progressing as smoothly as he had thought. The use of pseudonebulium in sufficient quantities would make him absolute master of the world. But——"

Folch's eyes glinted dangerously. "You are a pack of fools," he flung out to the others, ignoring Steve. "According to Dodd you'll be dead, or what amounts to death, in four days. Nothing can save you now. What does it matter if my country gets the secret of pseudonebulium? What difference would it make to you, to any one else? But the money that will be paid you would buy those supplies Dodd thinks necessary to his antidote. That means you will all be saved, while the rest of the world, including my countrymen, would have passed under the influence of the gas."

He was sneering covertly now, making mock of their foolishness. Yet it was a specious argument, carefully calculated to win them over to his side.

Mrs. Kuntz nodded her masculine head vigorously. "Do you hear, Josef? It makes sense. Say something!"

Poor Kuntz said timidly, doubtfully, "Perhaps then he is right. Maybe it would be best——"

Clara Claiborne moved between her husband and Hanteaux. Her perfume intoxicated the Frenchman, enwrapped her husband. Her lips were parted, and panic stared out of her baby eyes. It had taken her a long time to discover just what it was these others feared so greatly, and only that morning it had really penetrated. Since then she had been hysterical. She wanted to live with all the ardor of her selfish nature.

"Give him your silly old secret," she panted to Steve. "I don't want to die."

Henry Claiborne turned his near-sighted eyes on his wife with a strange, puzzling look. He said nothing. But Hanteaux bowed gallantly to her. "It is already done, *cherie*," he murmured.

Steve clenched his hands. "The answer is no!" he snapped. "Not even for a minute would I turn the process over to your War Lord."

Dr. Clay compressed his thin lips. "You forget, my dear Dodd," he said precisely, "that we also have something to say concerning our lives. We have invested our energies and our money, and we may be considered as partners. I suggested we take a vote."

Steve took a step forward. "Why, you——" he started in a choked voice. The atmosphere fairly crackled with electricity. Folch waited, a saturnine look on his dark face. Matters were playing into his hands. Then Gardner moved into the breach. It was high time.

"Just a moment, Steve," he interrupted. He faced the others. "You of course realize that Folch and his master do not believe that the nebular gas will have any effect on humanity?"

"Naturally not," Folch answered contemptuously, and stopped short, realizing he had said too much.

"Exactly," Gardner pursued evenly. "If they are right, then you have placed a weapon in the War Lord's hands that will make slaves of the rest of the world. Oscar Folch was sent here deliberately as a spy, to steal the secret, to buy it, if possible."

"But we believe," Dr. Clay clipped out. "I've worked too long with pseudonebulium to doubt its effects even in concentrations approaching a vacuum. Folch was correct, even though he thought he was mocking us. They'll die from the effects of the gas, whether they have possession of the process or not. While we at least could use the money

to perfect the antidote on which Dodd bases his hopes. What's wrong with that?"

ONCE MORE Steve was himself. He could see how plausible the argument was to the others. "This!" he told Clay. "The formula I evolved is purely theoretical at present. From certain physical data Hanteaux has furnished me, from the knowledge I have of the properties of the rare elements I mentioned, it seems to me that they, in certain combinations, would remove the ionization from the gas and bring it to the condition of ordinary air. Clai-borne's experiments have shown definitely that the peculiar catalepsy it induces is caused by the permanent fixation of the molecules within the blood stream. Once pseudonebulium turns to un-ionized air, it will bubble out, and the effect dissipated. But mind you, this is all theory. It may work; it may not. If it doesn't, nothing will matter; sale of the secret, or no sale. But if it does——"

"Then certainly we are saved," Hanteaux rumbled.

"Yes," Steve flashed back. "But you forget that unwittingly I told Folch, as well as the rest of you, what materials I required. The War Lord has scientists also, and with more resources than we have at their disposal. They will duplicate our work, make the antidote in enormous quantities, inject it into their people. The rest of the world will succumb; only the subjects of the War Lord will remain."

"And ourselves," Clay amended.

"How long could we survive against his hordes?" Steve flung at him. "Unless we bowed our necks and became the meanest of his slaves."

There was silence at that. Only Clara whimpered: "I want to live! I want to live!" Her husband quietly edged away from her, his forehead puckered with struggling thoughts. The

others sensed the dilemma, thrashed it out in their own minds. Folch, glancing keenly from one to the other, saw that he had been beaten. He moved stealthily toward the door. But he could not resist a last attempt. "The offer will hold good," he announced, "for exactly three hours more. Until midnight. After that——"

Deborah cried out suddenly. "But he knows the formula for the antidote already, Steve."

A snarl of triumph writhed over the spy's dark features. "Fools! Of course I do. Go on with your silly Noah's Ark. I'll have both gas and antidote within a day. Good-by!"

He swung around and darted through the door. But already Steve had left his feet in a long slashing tackle. His outstretched hands caught at Folch's legs. The power of his driving body knocked the spy off balance, sent him crashing to the ground. Within seconds Steve had dragged the stunned, half-unconscious man within the house, and locked the door. Fortunately it was night, and no one had seen the struggle from the street.

Within seconds more Folch was trussed up and carried bodily to a room in the upper story, where he was left bound and helpless, a prisoner.

"That's that," Steve said grimly. "If humanity becomes extinct, at least the War Lord and his legions will not be left to inherit the earth. And now let's get back to our work. Perhaps we can find some other method of deionizing the gas."

Despair was on every face. It took an effort of will to return. Hope itself was hopeless. No one thought of Dr. Cunningham's wild promise.

It was dawn again. Lights had burned steadily in the house. They were working day and night now. Sleep was a matter of snatches. Steve, hollow-eyed, gaunt, groaned as he gulped the hot black coffee that Deborah had

brought him. "You're killing yourself," she said anxiously. "You must get some sleep."

He laughed mirthlessly. "Look at those mice," he said. "We'll all sleep a long time soon enough."

"On the track of anything yet?"

"Not a thing," he answered wearily. "The other formula had at least theoretic possibilities. Now I'm just going blind. Hello, what's that?"

Downstairs there was a commotion, a babble of voices. Then hasty steps, clearing the stairs two at a time. Dr. Cunningham flung into the room, panting, his rosy cheeks white with exertion. Under his pudgy arms were bottles. Behind him stout Mrs. Clay staggered under the weight of a metal pressure tank.

"Good Lord, George!" Steve cried. "What the devil have you got there?"

Cunningham deposited his bundles carefully on the table. One was a leaden tube. Then he straightened, gulped twice before he could catch his breath.

"Let's see now," he glowed in triumph. "The lead tube contains radium sulphate; over there is metallic scandium; here is lutecium chloride; and that tank Mrs. Clay helped me with holds krypton."

Steve caught hold of his shoulder, gripped him with fierce intensity. "How did you get them?"

Dr. Cunningham's blue eyes opened innocently. "Let go, Steve, you're hurting my shoulder." Dodd dropped his hand. "That's better. How did I get the stuff? Simple. I took it." He chuckled. "Took it when they weren't looking. I really was cut out for a burglar. That is a profession. It requires skill, daring, a certain athletic agility"—he winced at the thought of something, looked down mournfully at his trousers. There was a long rip down the left leg. "Yes, sir, I mustn't forget the art of tapping a watchman

not too hard on the head, yet sufficient to——"

"You stole!" Deborah cried, horrified.

Cunningham turned to her with a hurt look. "Stole? No. Just borrowed what those idiots won't need in a few days anyway, unless Steve here——"

Steve shook his head with a groan. "It's too late, George. By four hours. Your larcenous venture almost saved the world against its will. Four little hours!"

Deborah flashed out at him. "Steve!" she spoke rapidly, "never mind the four hours. Get started. Work as you've never worked before. Let every one drop whatever they are doing, concentrate on this one thing. Parcel out the task so that even a hundredth of a second is not lost—day or night. Your reaction-time calculations may be wrong; the nebula may reach here a trifle late; its period of filtration through earth's atmosphere may prove longer than you anticipate. Hurry!"

Steve sprang into action. His face lighted up, even though inwardly he knew all the data had been checked and rechecked. But feverish work would take their minds off the inevitable doom; hope would still flare. He crackled out orders. The huge house became an ordered bedlam of activity. Every one pitched in—men, women, and even the smallest child—in a gigantic race with time, with onrushing death.

VIII.

IT WAS the last day. The whole colony of Noah's Ark was huddled in Steve's laboratory, watching with dull, sleep-bleared eyes the last maddening reaction. It was a highly delicate, slow-moving affair. A glass chamber held the product of days and nights of ceaseless toil. The scandium and lutecium chloride were in complicated combination with more plebeian elements—

phosphorus, hydrogen, oxygen and aluminum.

The formula was of staggering complexity. The last step consisted in forcing this black, powdery end-product into chemical union with the krypton gas in which it was bathed. Now krypton had always been thought to be chemically inert; that is, it would not enter into any reaction whatsoever. But Steve believed—and so his theoretic formulæ seemed to indicate—that if the two were associated in the presence of a radium salt, the constant bombardment of emitted electrons and gamma rays would force them into the desired combination. And this combination should, according to theory, deionize pseudonebulium.

But unfortunately the process could not be hurried. There was no known method to increase the speed of emission of radium. All they could do was stand by helplessly while the radium kept up its constant bombardment on the black powder and krypton gas. Behind the glass chamber was a fluorescent screen. It was dark now. When that sprang into sparkling brilliance, it would mean that the radium emissions had finally completely saturated the mixture in the chamber, that the reaction was complete, and that the free electrons were hurtling through to impinge on the screen.

According to Steve's figures, that would take exactly ten hours longer. It was now six in the evening. At the stroke of midnight the penetrative molecules of the nebular gas would have sliced through earth's atmosphere as if it were so much butter. Hanteaux had proved conclusively, by painstaking experiments, that even the presence of one molecule of gas per cubic millimeter—a vacuum less than that of interstellar space—would bring about the weird catalepsy.

They stood there, listlessly, watching. There was nothing more they could do

Outside, the sun was setting in a strange smoky glow. Nightly the nebula G 113 had grown in intensity. The night before it had been a broad band obscuring half the heavens. Behind its strange, greenish glow only the moon and the brightest stars glimmered faintly.

Now it was rushing with inconceivable velocity through the belt of the asteroids, well within the solar system. Nothing could stop its mad flight. Not the bulks of Neptune or Saturn, not the vastness of Jupiter itself. All were enveloped in the poisonous vapors. Life, should there have been any on those planets, was wrapped now in wasting sleep. Within several hours more Mars would go into the trance; within six hours earth and all its teeming millions would be a huge mausoleum, a graveyard of moveless things. Only plant life would go on. The gas affected blood corpuscles only, nothing else.

In spite of the still-confident pronouncements of scientific bodies, a certain unease had swept over the world. That vast band of greenish light which obscured the night sky was terrifying enough in all conscience. Suppose, the whisper ran rustling around the earth, the prophesiers of doom who had immured themselves voluntarily in Noah's Ark might be right. They had been scientists of reputation.

Crowds milled ceaselessly through the streets of the cities, stared upward at the boding heavens. Even in shattered Europe, the war had languished for over a day. The troops refused to fight, waiting in their trenches for the fatal time limit to pass. It was silly, they had been told, but still— Desertions from the ranks took on the aspect of mass movements, as soldiers fled secretly to their homes and loved ones, in case—

The War Lord fumed and stormed in vain. He ordered decimation of certain mutinous regiments. The men

died, but the living sullenly refused to move against the enemy. Then, wisely, on the advice of the minister of propaganda, he backed down. Another series of executions, and he would have had a first-class revolt on his hands.

The agent he had sent to America was not heard from—failure was the unforgivable offense—and Folch had disappeared, vanished. One could only wait for the passage of the nebula. In the stillness of his room the War Lord suddenly shivered. Suppose the fools had been right; suppose—Bah! It could not be. To-morrow when the dead line had been passed, and nothing happened, he would renew the attack on all fronts. He would send at once a swarm of armed agents in disguise to America, to get the secret of the manufacture of pseudonebulium by swift attack. Then—and a thin, cruel smile writhed over his lips.

OUTSIDE the windows of Dodd's laboratory in East Haven the crowds were gathering. Hundreds, thousands, until the street was packed solid with humanity. As the sun had died away in a green haze, the nebula had flashed into viridescent splendor. It was an awe-inspiring sight. A strange, pulsing glow that flashed across the heavens. Growing visibly larger, extending its boundaries, minute by minute. Star after star wavered, pathetic pin points of light, on the edge of the flare, then disappeared, swallowed in the maw of an insatiable monster. It was ten o'clock; two hours more. Mars was already penetrated with nebular atmosphere.

The crowd muttered and shuffled and stared upward at the lighted windows of the laboratory. The contagion of belief swept like a great wind through their ranks. That terrible green monster hurtling through space must be poisonous. The fanatics of Noah's Ark had been right.

Their voices raised in multitudinous babble. They cried aloud for aid. Suddenly the bemocked were greeted as the saviors of the world. Help us, they clamored! The world seemed to arouse itself to its peril, at this belated hour. The telephone began to ring. Scientists phoned, their scepticism wavering under the impact of that vast band of green light, questioning, asking with carefully casual speech about the antidote, if any. Then came the deluge. Men of wealth, bankers, financiers, captains of industry, giants whose lives had been wrapped in impenetrable glamour, caught the last-minute fear, offered thousands, hundreds of thousands, millions, for the antidote.

Steve finally cut the wires. It was all so tragically ironic. Days earlier, money meant possible salvation of all humanity. Now, it was so much useless metal, curious symbols of nothingness.

But that did not stop the distraught men of wealth. Men somehow even in the face of death clutched with desperate fingers at the magic metal. Multimillionaires forced their way behind charging bodies of police to the locked doors of Noah's Ark. Steve had to talk to them. Otherwise in their terror they would have battered down the doors. He explained carefully and bitterly how vain their wealth was now; that it was too late; that the antidote had not been found.

They did not believe. They offered fabulous sums, all their fortunes, for admittance to the supposed haven of safety. They would have smashed their way through, had not other forces arrived, convoying other frightened men of wealth. Disputes for precedence arose, words turned to blows, to pitched battles. The street became a shambles of struggling, cursing men. Revolvers barked, machine guns suddenly clattered. The crowd fled screaming, trampling each other in their mad rush.

Soon only the dead and the dying were left.

The little group had huddled behind barricaded doors while the shout and the tumult was on. It was eleven-thirty now. One half hour more to live. One half hour between-life, awareness, and the creeping sleep of inevitable death.

Steve hugged Deborah fiercely, openly, unashamed. Life would have been so glorious, and now—

They were all silent, even the children. Mrs. Clay held tightly to her little boy and girl. They were whimpering softly, somehow afraid. Dr. Clay was stroking his wife's hair awkwardly. He was not used to emotion. Mrs. Kuntz, masculine, domineering, had suddenly become pliantly feminine. She was clinging with brimming eyes to her meek little husband, and he was comforting her. Their four children stared with wide, serious eyes on the scene.

Clara Claiborne was hysterical. She cried wildly, again and again, demanding that Steve do something, that her husband save her from the hour of midnight. But her husband stared at her curiously with his near-sighted eyes and made no move. Steve did not answer, nor did Samuel Gardner, sitting quietly, with a certain dignified nobility, awaiting death. She turned with streaming eyes and disheveled hair to Hanteaux. The Frenchman, ordinarily gallant and attentive, turned away without a word.

Fifteen minutes to twelve! Steve's eyes were intent on the fluorescent screen. Nothing! Its surface was blank and dull. He crushed Deborah closer to him. Outside, the sky was a blaze of green luminosity. There was no moon, no stars, only the overpowering nebula. The street was clear. Even the groans of the wounded had ceased. But from afar came the frightened wail of a city in fear. The nebula was too imminent, too all-pervasive, for

belief in the assertions of those who were optimists.

Steve said suddenly, "Darling, we have only five more minutes." Their lips met in desperate union. For a long moment there was silence, punctuated only by Clara's hysterics. No one paid her any attention. Then there was another sound. Of stumbling, fleeing feet. Down the stairs they went, across the living room. A door slammed shut. Dr. Cunningham remarked in casual voice: "Friend Folch has escaped."

Steve grinned mirthlessly. "Let him. It doesn't matter now—for him, for us, for any one."

Three more minutes. The screen mocked at them with its lusterless surface. The radium emanations shot across the canalized path, impacted steadily on the mixture. The black powder rested inertly in its bath of krypton. It seemed as stable as ever.

Deborah raised her eyes. They were brave and steady. "Steve, I want you to put on your lead-impregnated suit and helmet."

He looked at her in surprise. "Why, darling?"

"In case the reaction goes through. The suit will protect you against the gas. You might even be able to bring the rest of us back to life."

Steve laughed harshly. "It will take exactly four more hours for the final reaction. I can live in that helmet not over ten minutes."

"Try it anyway," she urged, "for my sake, for the sake of all these people. My father—" Her voice broke; she could not go on.

"All right," Steve said. "I'll do it." The others watched him apathetically as he thrust his body into the lead fabric suit, as Deborah with quick-moving fingers fastened the helmet into place. No one else made a move to help. It was silly; it was worse than useless.

Clara Claiborne let out a wild shriek.

Her eyes were wide on the clock on the wall. It was striking midnight!

IX.

BONG! BONG! BONG! Strokes of doom. Hammer thuds counting out death to them, death to all humanity, death to a swarming earth. The great experiment called life was irrevocably over. Nothing could be heard but the remorseless blows of fate, and the frothing hysterics of Clara. No one went to her as she slumped in her chair in a faint.

At once all eyes turned for the last time to the screen. Its dull surface was unmarred. A deep suspiration went up, the sacrificial offering of those about to die. They huddled close together, like sheep before the butcher's mallet.

The last stroke died on the air. Silence, impenetrable, profound! Even the city outside seemed wrapped in silent fear. All the earth was cowering in the presence of the visitor from extragalactic space.

For a moment time itself seemed to stand still, to stretch itself into an eternity of expectation. They were a tableaux of wax figures, unmoving; hardly daring to breathe. God knows what emotions each one experienced, down to the smallest child, waiting, suspended between infinitudes. Each inhalation might bring with it the deadly molecules of pseudonebulium. They had seen what had happened to mice, to guinea pigs.

A minute passed, and the thudding of their hearts filled their ears with alarming sound. Two minutes. Hanteaux stirred. "We are still alive," he growled shakily.

"That does not mean anything yet," Gardner said calmly. His eyes were fixed with painful intensity on his daughter. She was clutching the heavily clothed arm of Steve.

Three minutes—four minutes—then five—

Outside, the earth seemed to shake itself in bewilderment. A low hum arose, the half-hopeful buzz of thousands of voices. It rose in intensity; it became a joyful pæan of humanity released from its fear. The dead line had passed, and they had not died.

Dr. Clay threw back his head and laughed. Hysteria shot through his laugh like a scarlet thread. As if a spring had released them, the others moved. They jumped to their feet. Hanteaux's eyes glowed on the limp form of Clara. He ran to her, lifted her up. Claiborne stared at him with furious, hating eyes, but did not move. The others chattered with the reprieve from annihilation. Outside, the pæan of joy that swelled from the city's thousands had taken on an uglier note.

Dr. Cunningham cocked his ears. "It sounds," he remarked gently, "as if our friends of the human race resent the fact that we might have misled them. We had better prepare to receive visitors shortly."

Mrs. Kuntz sprang away from her husband as if ashamed of her excess of tender emotion. She glared owlishly at the grotesque, motionless figure of Steve.

"It's all your fault," she screamed. "You fooled us: you scared me and my idiot husband to death. We are penniless now, do you hear—penniless! I hope they tear you to pieces. Jósef!" She swept him and the four little girls into the compelling folds of her glance. "We go from here—now—at once!"

Josef Kuntz looked at Steve and Deborah imploringly. Then meekly he followed her. "Yes, Anna!"

Dr. Clay said maliciously. "Might as well take off your mask, Dodd. Too bad——"

He stopped on the word. A puzzled expression flitted over his face. His

body stiffened. Slowly, very slowly, he went toppling to the floor. His stout wife screamed, took a step forward, and dropped. Steve wrestled frantically with the screws of his helmet.

It had come! The nebula G 113 had arrived, seven minutes late, but with deadly effect. All around him they were dropping, huddles of limbs and clothes on the floor, unstirring where they fell. God! One frantic thought burned in his mind, seared all other thoughts with shriveling flame. Deborah! She must get that last few minutes of life, not he. Her dear face wavered before the leaded lenses of his goggles. Something was happening to her. Her arm went up with infinite slowness, jostled his fingers. She was trying to prevent him from loosening the helmet. Then her mouth opened, did not close. He caught her as she wilted. He set her down in a chair. Horrible stillness reigned in the room. All had succumbed to the deadly, invisible molecules of the nebular gas. The silence spread over the city. The storm of voices had cut off abruptly.

He was alone, horribly alone, in an inimical universe. Of all the earth and its teeming millions, he only was still alive. The last poor solitary specimen of the curious thing called life. He strode clumsily to the window, stared out. The street was a graveyard. The dead and the living dead were indistinguishable. Nothing stirred. Hundreds of bodies lay in the sleep that would never end. He raised his eyes to the heavens. The nebula was a green flame enswathing the sky. It was a glowing pall that draped the earth it had doomed to extinction; it danced and mocked with hellish fires.

Steve lifted his fist and shook it fiercely at the merciless visitor from outer space. He, the last man on the lifeless ball called earth, cursed it and shouted senseless defiance. The skies

seemed to rock with cosmic laughter at their puny antagonist. G 113 had done its appointed task. Within a day it would vanish, trailing its frightful speed farther out into space, seeking new solar systems, new galaxies, new universes to stifle with its tenuous breath of destruction.

Steve choked suddenly. His futile curses had used up the air in his helmet. He gulped and breathed in no oxygen. His chest labored, his heart hammered. He staggered back into the room. He would die at Deborah's side. Die, too, cleanly and swiftly, by the cataleptic trance of pseudonebulium, not by the horrible retchings of suffocation. He tore with frozen fingers at his helmet. The screws turned slowly. His tongue lolled out of his swollen mouth. Air! Air! Poisoned or not! Anything but this frightful choking sensation.

Ah! There it was coming! Another turn and the helmet would drop back. He would take one blessed gulp, then — His fading eyes lifted for a last look at the peaceful figure of Deborah. They wavered on her, blinked.

The fluorescent screen was a glittering sparkle of dazzling, tiny pin points! Within the glass chamber the black powder had disappeared. In its place a dark-red liquid caught the light, winked at him with beaded bubbles. The reaction was complete!

Complete? What tragic irony? All were dead; he was dead, or as good as dead! The blood was roaring in his ears, his throat a tight constriction of fire. His feet, weighted with the leaden fabric, were rooted immovably to the floor. Too late! Everything was too late! Even if that wine-dark liquor held the elixir of life, even if it were capable of its theoretic possibilities!

Pain racked his frame. His heart seemed to have stopped its pumping. The room was growing dark around him. His eyes drooped, clung dimly to

the still form of Deborah. Deborah! Brave girl! She had urged him on, she had never given up hope. She—He was failing her, was not worthy of her confidence. The thought fumbled in his clogging brain, swirled around. He was failing her. Darling—must not—the haze deepened—he moved somehow. His legs were tons, but they moved—moved toward the glass chamber. The screen seemed to swell, the coruscating sparks filled the room, the universe itself.

His fingers were not a part of him. Yet instinctively he knew they had picked up the plunger hypodermic that lay prepared on the stand before the chamber. In a red blaze of gasping lungs he knew that somehow he had turned the pet cock, that the red liquid had poured into the basin before it.

He was only semiconscious now, yet under the driving impact of Deborah's trust, his gloved, icy fingers held the hypodermic steady in the new-born liquor, sucked it up. The last movement was unbearable agony, yet it was completed. There was no time for zipping open the suit, no strength for it. With the last expiring spurt of superinduced energy he drove the sharp needle through the thick fabric, through the skin and flesh of the arm beneath. The plunger went home.

Even as it did, he dropped as if shot. The deadly molecules of pseudonebulium had sped along the steel of the needle as if it were a tenuous medium, had penetrated into the blood stream. Gas

and theoretic antidote flowed simultaneously through his body.

His head struck heavily against the floor. Cataleptic rigor seized his limbs. There was a splintering crash. The lead-glass windows of his helmet had smashed. Air streamed inside. A second's awful clarity while his mouth and nostrils involuntarily gulped in the rush of oxygen. Too late, too late! His head sagged to one side, and he was still.

The laboratory was a huddle of unmoving forms. The city of East Haven was a vast mausoleum housing the sleeping dead. All over the world life had ceased. Ships swung pilotless to the beat of the waves, railroad trains thundered along steel rails until fires foundered, or they went splintering and crashing into stalled trains ahead. The armies lay in their trenches, heaps of moveless uniforms, locked in the same strange embrace of life-in-death. The War Lord sagged over the maps in his private chamber, arms spread greedily over territory that he could no longer conquer. The animals lay in the fields, and the birds had dropped like plummets to the ground.

The earth revolved ceaselessly in space, on its appointed orbit around its mother sun, feeling no longer the slow, crawling progress of parasitic life across its stony bosom. And overhead, all around, interpenetrative, the nebula mocked with green fires, careening through space with unbelievable speed, its unknown destiny still unfulfilled.

To be concluded.

Next month Nat Schachner tells how a man tried to guide the destinies of a new world. It is a very human, very thrilling conclusion to a great story.

A Princess of Pallis

by Clifton B. Kruse



Two scaly bodies were on the floor of the plot deck. Even now the girl's gun was leveled—

THE FACT that his red breeches were baggy and the blue tunic unbuttoned disturbed him not at all. Lieutenant Mardico of the Flying Engineers weaved his joyous and songful pace down the King's Highway,

trusting a spaceman's indispensable sense of place and direction to carry him safely to Dock 908, engineering field, within the next two hours.

What matter if Wiljon Kar was stewing? Old Mardico launched into the

forty-second verse of the "Dirge of the Dying Spaceman." It was a very sad song. It made old Mardico conscious of a spaceman's duty. He quickened his steps. Special engineering transport W62 was even now warming her torps for a 9 p. m. take-off. And Wiljon Kar was for spinning a ship's grads in the very split second of scheduled time.

It was eight-fifty when old Mardico hove into sight of the space-pocked W62. The sight of the grand ship made him tingle all over. Darkness had already enshrouded the International Territory of Toronto. Nevertheless, Wiljon Kar had left the main port ajar. A hazy, yellowish glow of light gleamed from the ship. Old Mardico stumbled forward eagerly.

This week's celebration in Toronto had been a glorious let-down. But from the wobbly functioning of his knees, old Mardico was faintly conscious that even such a veteran spaceman as he could miscalculate the quantity of roulek which might within reason be permitted to trickle and burn a calloused throat.

Abruptly Mardico stopped in his tracks. He was a scant fifty paces from the W62's main port when some one brushed past him, running swiftly toward the transport.

Mardico called out, started forward in a heavy, lurching trot. At the sound of old Mardico's voice the shadowy runner halted, turned about. The hazy light glinted momentarily upon yellowish hair and wide, blue eyes. Then the seeming apparition turned and dashed into the port. Steel slammed against steel as the port locks meshed into the casing.

Old Mardico choked, sputtered. She'd slammed the port right before his nose, she had! And it was a girl, a frail blond sort of girl! Maybe he'd frightened her so that she dashed in from fear.

Old Mardico's fat bulk tumbled back-

ward. His head slammed against hard earth. Before his horrified gaze the W62 pulsed into life. Her twin graduating torps were spinning their fiery spirals. Swiftly, evenly and with perfect acceleration, the W62 sailed skyward.

Old Mardico slobbered frantically. "They've gone—they've gone—they've gone and left old Mardico behind. It was that female—she fooled 'em—made Wiljon Kar think it was I who battened the port—"

The fiery dot became smaller and smaller. Mardico got to his knees, rubbed his head. He couldn't think straight. He tugged at his beard and stared up at the speedily diminishing glow. The W62 was still firing her grads. She was hardly beyond the stratosphere yet.

In another thirty minutes Wiljon Kar would blast the main torps with the ship's nose pointed toward Juno. In another thirty minutes! Old Mardico trembled. His massive fists were clenched. Something told him that Wiljon Kar and Prock were in trouble and would be needing him.

Fieldmaster No. 23, on night duty in the engineering section, jerked into wide-eyed wakefulness. Somebody was roaring for him to wake up and was shoving a blue sheet report under his nose. No. 23 rubbed his eyes, recognized the hard-fisted old spaceman as Lieutenant Mardico of the W62.

"Great Polaris!" No. 23 shook his head. "I reported the W62 as having cleared the field an hour ago!"

"She did but we're not here for wind-jamming. Do you see this blue sheet?" Mardico's eyes narrowed as he handed the report to No. 23. "You can see for yourself, as master engineer, Wiljon Kar is needing the X282. He's assigned me to follow. She's all ready over in Dock 718. All you have to do is file the report and flash me the release of transport X282."

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The fieldmaster was clearly befuddled. As a member of the world-famous crew of the W62, Lieutenant Mardico's signature upon a transport release was virtually as legal as that of a master engineer.

"You mean you want the X282—to follow? You're not going to pilot that crate alone out in space, are you?"

Mardico's fist crashed upon the desk. "Listen! Why do we have fieldmasters if not to release ships? I tell you I have everything ready. It is an emergency. You have my signature on the blue sheet and——"

It was ten-fifteen by the clock when old Mardico battened the ports of the X282. He had remembered seeing the old freighter blast in from Venus four days before: and though fieldmaster No. 23 did not know it, the X282 had really been stocked in order to carry a load of freight to Mars. But, by the time the bewildered fieldmaster would discover the mistake, Mardico would be thousands of miles beyond Earth.

X282 leaped skyward. In the plot deck of the old X-type freight transport Mardico heaved and sweated. The blast from Earth had nearly flattened him. Unlike the later transports such as the W62, the X types had no graduating torps. Instead of a gradual rise due to the spinning grads, the X type jerked spaceward in a series of straight-fire blasts.

Mardico hunched over the control panel. His jaw worked viciously upon the fistful of weechie he had rammed into his mouth. His stout old body quavered rhythmically with the steady barking of the X282's ring of secondary, or space-mounting torps. The plotograph above the controls he utterly disregarded.

Old Mardico could drive a transport. He knew every bolt and screw of either an X or a W type. But he could not plot an arc. He had blasted in the general direction in which the W62 had

sailed. And now he was scanning the telescopic reflector plate for a flash of fire.

Suddenly he shouted. His tremulous old voice rang out above the monotonous space whine. Mardico was tense now. His eyes did not leave the reflector. He was blasting to line that flashing red dot within the center of the visor plate. He let her take the main torps at full blast now. Madly the X282 charged forward. She was tailing the W62. Mardico drove her for all she'd give.

ABOARD the W62, Wiljon Kar carefully rechecked the indicated results of the third angular swerve within an hour. Beside him sat Prock intent upon his perusal of their flying orders. Special engineering transport W62 had blasted from Earth under sealed orders. Not even the fieldmasters and other petty officials had word of her destination.

The W62 usually carried a trusted and honored crew of five: Master Engineers Wiljon Kar and Prock, Lieutenant Mardico, guard detail, and two mechanics, Hals and Twombley. This was the council's most honored and trusted crew among all spacemen. Wherever trouble arose, the council need only dispatch the W62. If human courage and intelligence could solve the problem the crew of the W62 would do the job and do it right.

"Mardico was barely on time." Wiljon Kar turned from the controls for a moment's relaxation. "He signaled the ready signal at precisely eight fifty-nine."

"So I observed," Prock mumbled without lifting his gaze from the clip of special orders. "Hals and Twombley were in their bunks shortly after sundown. Which reminds me, we've not heard a squawk from Mardico since we blasted from Earth. Suppose anything is wrong?"

Wiljon Kar shook his head. "Prob-

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bly primed to the gills and passed out as soon as he flopped on the acceleration absorber. Let him sleep it off. There'll be plenty of work when we reach the area of the asteroids. By the way, have you a clear idea of the problem on Juno? Professor Anger started to tell me when Councilman Schwartz interrupted."

"It isn't only Juno." Prock's voice became sharp with interest. "Anger wants us to give particular attention to Pallis. Records show that this planetoid is a free-claimant possession of a man named Tradine. As a matter of fact this Tradine was presumably killed a decade ago while doing a bit of freelance adventuring in his own ship.

"He made his money raising and transporting the Plutonian scale beasts for field work on Mars and Earth. He was a queer devil—but amazingly brilliant—and mad for gold. It seems he spent all his earnings in carrying on his constant series of gold-hunting expeditions among the planetoids. A few years before his disappearance he did establish his claim upon Pallis.

"However, this may have nothing to do with our problem. We're to look out for some strange force suction near either Juno or Pallis. I don't quite understand it, Wiljon Kar. It seems that the last cargo train from Jupiter barely escaped it. Got near enough to describe the effects though. It's a cone of cloudy energy with a vortex somewhere between Juno and Pallis. There have been four transports lost within the past two months—all heavy X-type freighters returning from Jupiter with full cargoes. It seems that——"

"Hold it!"

Wiljon Kar straightened up over the controls. He was staring intently at the light fluctuations upon the plottograph. Carefully now he made certain angular calculations.

"We're being followed!"

"What?" Prock moved over beside

him. Both master engineers were studying the glowing red dot which indicated a transport to be dogging their flight. Now Wiljon Kar was cutting sharply away from their original course. He blasted ahead with a sharply increased acceleration. They observed the red dot. It made a similar curve, though with erratic jumps. The pursuing transport was driving toward them at an acceleration which was noticeably great. The W62 curved again. The pursuing transport did likewise.

Wiljon Kar increased the speed of the W62. At such a rate they would be powerless to avoid any chance meteor. The whine of the ship's beams arose to a shrill pitch. The stench of superheated oil pervaded the decks. Still the red dot glowed with ominous intent upon the plottograph.

"We may have to arouse Mardico yet," Prock was muttering. "We might need a gunner. Great Sirius, Wiljon Kar, do you think——"

A noise at the door behind them startled the two engineers. Though Wiljon Kar kept his attention to the controls, Prock turned around. He stepped forward, eyes widened.

"Who—who—what——"

With a deft kick the girl slammed the door shut. Her left hand nervously brushed at the strands of yellow hair which tended to straggle into her eyes. But her right hand remained closed tightly upon the bulge in her jacket pocket.

Her voice was low, soft, and scarcely above a whisper. Nevertheless, it was steady. "You will continue your flight, gentlemen. In the name of the King of Pallis, I command the W62."

Wiljon Kar whirled around. His deep-set black eyes first widened and then became hard, expressionless. The girl met his gaze, held it calmly.

"At such a speed," she suggested, "you had better attend to your controls."

Wiljon Kar's mouth tightened to a narrow, colorless slit. Though he was unconscious of the gesture, one hand tugged at a jet-black forelock. His gaze held to the face of the girl—clear blue eyes, features strong yet not unlovely. Somewhere he had seen her before. That voice, now, where had he heard it before? Athalon upon Mars, or more likely Jupiter? He wasn't sure. Yet there was something about her——

"Your controls! Watch out; the pressure beam is——"

A SHARP hissing blast cut into the girl's screamed warning. Instantly Wiljon Kar whirled around, yanked with both hands upon the deck isolator lever, then with a deft kick released the feeder gear. A weird moan trembled over the ship as the fire-belching torps were abruptly checked.

"A compensator tube burst," Wiljon Kar barked. "Above lunar storage deck—it'll be soaked with boiling oil—Betelgeuse! Had it been above any of the other——"

A sharp scream burst from the horrified girl. Her eyes widened strangely. Her face became drained of all color. Her hands were no longer upon the gun in her jacket pocket. Tremblingly she extended them toward Wiljon Kar, stumbled hysterically toward him.

"They—they were on—on the lunar storage—— They—oh, help——"

It was Prock who leaped forward in time to grasp her inert form. She seemed scarcely more than a child to the elderly master engineer as he carried her across the deck to the cot.

"They" were hiding in the lunar storage deck. Wiljon Kar was mumbling to himself, shaking his head in bewilderment. Who were they? Then he shuddered. The compensator tube had burst with the W62 at full acceleration. Whoever had lurked upon that deck had suffered a most shocking death. There had been a good hundred gallons of

superheated oil in the compensator tube above the narrow shaftlike storage deck. Abruptly Wiljon Kar shook himself to free his mind of the ugly thought.

He was back at the controls. The plottograph glowed ominously red now. For the moment he had quite forgotten that mysterious pursuing ship. It was gaining rapidly. Wiljon Kar stared at the plottograph grimly. His hands shook as he rested them lightly upon the controls. A full quarter hour must elapse before he would dare fire the torps again.

The W62's speed would hold by sheer momentum, but it would not be great enough to overcome the fierce drive of that other ship now. With one compensator tube gone he would dare use but one half acceleration.

Prock's words jarred him. "She is resting now. I have removed her gun and locked her wrists to the wall chains."

Wiljon Kar nodded. "Then call Mardico at once." He indicated the red glow upon the plottograph. "We may need a gunner soon."

Prock switched on the ship's radiophone. There came no response. Again he flashed a call; still no answer. Prock's gaze met Wiljon Kar's significantly.

"I'm going below," he mumbled. "They've done something to the crew."

Wiljon Kar was blasting the W62's torps again when Prock returned. Twombly and Hals shuffled in ahead of him, their faces strangely set. As Wiljon Kar turned from the controls, Prock closed the door sharply, hurried across the room.

"Mardico did not reach the ship," he reported tersely. "Hals was in his bunk and Twombly stood in the ramp just within the outer port hall. There were three——"

"Tall and covered with brown scales, sir," Twombly gulped and sputtered his words forth. "Nary a human thing about 'em was there and I can swear it,

Wiljon Kar, for I'm never one to taste a drop of roulek. They pinned me to the wall, got Hals here right in his bunk. Then just as they were hoisting me in the air I caught sight of a girl coming on a run through the port. Slammed the port pronto, sir, and then barked something to the beasts which had me. They put me in my bunk, tied me fast, sir. And that's all——"

Wiljon Kar's face showed relief. "Then Mardico wasn't a prisoner on the storage deck. Praises! I had feared that——"

"But those beasts, Wiljon Kar, they were——"

Prock interrupted: "Doubtlessly were hidden on the lunar storage deck by this girl. Is that it?"

The girl tried to get up. Then noticing the chains which bound her wrists close to the wall she shrugged and lay back upon the couch. Her eyes, brilliantly blue now, stared with cold, silent defiance at the astounded crew.

"That's she!" Twombley jumped, backed, away from the girl. His quavering forefinger pointed toward the mysterious prisoner. "She it was who commanded the brown scaly beasts. She closed the port and signaled for the blasts!"

With nervous impatience Prock motioned the excited mechanic for silence. Wiljon Kar was back at the controls. The crippled ship careened in sickening lurches and quick turns. Yet, even as he struggled to break away, the strange ship behind them held its pace with dogged determination.

The eyes of all those others on the plot deck were fixed upon the pilot's tense manipulations. Their bodies swayed awkwardly with the odd gyrations of the ship as Wiljon Kar fired a succession of side blasts. The red glow upon the plottograph swung from point to point. The other ship was equal to every maneuver of the W62. In steady acceleration alone they might outdis-

tance the pursuer. But with one compensator tube gone such a course was definitely prohibited.

Hals swung his huge body across the room. The face of the blond giant was muscled in passive restraint.

"Wiljon Kar, sir," he said sharply, "shall I aim the guns?"

The master engineer mopped a sweat-streaming forehead. His jaw was set with grim determination.

"Take charge of the gun deck, Hals. Twombley will assist you. We'll show them that if the Flying Engineers know little about fighting they know even less of how to surrender."

The hands of the clock checked a full thirty Earth minutes. The beams of the W62 hummed a low-pitched wail.

Prock came over beside Wiljon Kar. His voice was strangely calm, unemotional.

"She's a scant quarter measure to our heels. Shall I take the controls?"

The W62 lined out in a straight blast. Wiljon Kar studied the red glow. At a quick command from him Prock checked the power. The gun signal flashed. The W62 quavered with the discharge.

"Full blast ahead."

Yet scarcely had the command been uttered when a thunderous roar echoed throughout the hurtling transport. Wiljon Kar stumbled the width of the room. A low groan came from the girl.

Immediately the door burst open. Twombley staggered into the plot deck.

"They hit us—tore away our muzzle points—we can't fire—— Hals is working on the guns—but he says to tell you they're completely smashed!"

LIEUTENANT MARDICO spat-tered the far wall with a vigorously exuded mouthful of weechee, reared back in the pilot seat and brushed the yellowish stain from his wiry gray beard. It was a gesture of triumphant satisfaction. It had been a perfect shot.

One expertly aimed discharge had leaped forth with uncanny accuracy and burned out the W62's guns.

The beams of the old freighter groaned with ear-splitting shrillness. She was a strong ship, built to carry tons of freight from planet to planet throughout the interplanetary's universe-wide territory of commerce. Although Mardico had poured in a maximum flow of fuel since blasting free of the stratosphere, still the X282 roared on without a sputter.

Mardico mopped his neck, took another pull from the stone tankard on the seat beside him and straightened his massive shoulders for the grim business ahead. The W62 was a much smaller ship than the X282, but twice the length.

Mardico's plan of attack was simple: He'd drop the X282 astraddle the engineer's transport, right behind the observation port. He didn't know what had happened to Wiljon Kar and the others. Maybe they were dead. But one thing was sure! Either he'd rescue or avenge. And there was a steely hardness in his eyes which matched the bulldog thrust of his bristly chin.

The impact crumpled three muzzles of the row of secondary torps upon the underside of X282. Simultaneously the two anchor cups became fixed in their magnetic grip upon the slim ship's hull. Now the torps of the freighter were no longer firing. It was as if some monstrous eagle were carrying aloft an incredible, fire-breathing demon of the sea.

A stab of blue-green fire spat from the squatting transport's forward guns.

The fluorescent mist coiled about the W62's observation port. The bird of prey seemed to be gnawing at some vital part of its victim. Swiftly the stream of energy faded; nevertheless, the steel and transparent silico iron of the observation port glowed a vivid red.

Over his space suit Mardico had arranged the thick armor of Venusite plates. Designed particularly to protect

the space guardsmen from all manners of rays, the Venusite plates glistened with scintillating brightness. The softened walls gave before Mardico's smashing blows. He was inside the W62.

"Wiljon Kar! Prock! Wiljon Kar!" Lustily old Mardico called through the radiophone. "It's Mardico!"

Beneath his padded armpits extended the nozzles of two liquid-fire guns. A door at the lower end of the ramp opened. Wiljon Kar came running toward the grotesque figure. And behind him came Hals, unashamed of the tears which glistened in his eyes.

"It's Mardico all right." Wiljon Kar was shouting in his radiophone for the benefit of Prock and Twombly, back in the plot deck. "He trailed us in an X-type freighter. We should have known. No one else would have been fool enough to blast away from Earth alone."

Mardico tossed aside the Venusite armor. Hals was alternately assisting him to free himself of the cumbersome equipment and pounding the old guardsman upon the back.

"And I figured 'twas a stinking plot o' evil sorts." Old Mardico's words tumbled excitedly from his weechie-filled mouth. "Says I to myself, 'Tis never the day will come that sees Wiljon Kar playing such a scurvy trick upon his faithful guard.' Too many times have we visited hell together to thumb our noses at the hairy one himself. A plot it is. Some rascally crook has in mind to steal the W62 with her crew aboard. And so I think to myself of the X282 which is all ready for——"

The thunder of an explosion racked eardrums. The W62 quivered, seemed to lurch to her side. The explosion tossed Wiljon Kar down the ramp. Both Mardico and Hals sagged stupidly against the walls.

Abruptly the transport blasted forward in desperate acceleration. The

force flattened all three of the men to the ramp, seemed to pull the very air from their lungs.

"Prock! Prock!" Strangely his voice echoed against the broken radiophone. Wiljon Kar hauled himself to his feet. Again he called. And again no response. The W62 was tearing through space at a dangerous speed. What had happened? Wiljon Kar tried the door at the lower end of the ramp. It had been locked from the other side.

"Prock doesn't answer!" Wiljon Kar shook his head to clear it. The sudden acceleration had made him dizzy. He was acutely conscious of Hals and Mardico as the two stared toward him expectantly.

"It's that girl," Hals was mumbling and rubbing his head. "She must've gotten loose—done something to Prock and Twombly—or else—or else there were some more of those brown scaly things hidden somewhere on the ship besides on the lunar deck— Maybe—"

Wiljon Kar shook himself into activity. His commands lashed the other two into quick movement.

"Mardico—get back to your freighter—you and Hals— We're trapped here—helpless—but wait—I'll want that Venusite armor."

THE W62 was charging crazily with her lopsided load. Back at the controls of the X282 old Mardico sat tense, waiting, his eyes held fixedly to the visor plate.

He caught the signal. Wiljon Kar had crawled to the very nose of the W62. Mardico blasted free, fired her torps and clenched his hands upon the controls. The freighter hovered in ominous pursuit just above the crippled W62. Hals clambered to the seat beside old Mardico. Together they watched the creeping movements of the master engineer as he slid over and around the long, slender hull. The reflections from

the Venusite plates about his space suit made him clearly visible.

Time came to have no meaning. Their ears had become numbed from the steady whine of the ship's beams. Old Mardico roused. He had dozed with his head in his arms. He glanced quickly toward Hals, breathed deeply with relief. The blond giant had seen him nodding and had silently taken over the controls. Mardico studied the reflection of the visor plate, gasped. From the nose of the W62 below him a succession of regularly timed blue flares were signaling some one.

"Maybe 'tis Wiljon Kar," Mardico uttered in an awed whisper. "It is truly like him to squeeze somehow into the ship and get to the flash marker's station, there to signal Earthward for help."

Hals shook his head. "Not to Earth; she's headed toward the planetoid belt and the flashes are shooting straight ahead. I'm not sure, but from what little I understand of the plottograph here, we're all heading toward a small planet. And she can't be far away either—"

"Look! Colossus! Hals, but cast your eye to that row of mushrooms yonder!" Mardico was on his feet. Eyes popped in horror as he stared wonderingly at the visor plate.

A scant measure to the fore of the two speeding transports was a vast ring of strange pulpy-looking globules. Arranged in a perfect circle, miles in diameter, they were turning slowly around a small, faintly luminous body at the hub of this grotesque wheel.

"What shall we do? What shall we do?" old Mardico blubbered. "And Wiljon Kar is not here to command. Ah, woe indeed to us if anything has happened to Wiljon Kar. I tell you, brother Hals, were he with us 'twould be simplicity itself, for whatever in this universe the great Wiljon Kar does not

know 'tis but little time it takes for him to find out."

Hals grunted. There was an expression of fatalistic calm etched upon his broad features. "Hell's fury, Mardico, why bellyache? We'll know soon enough ourselves."

But such philosophy was not for Mardico. With one hand he tugged fiercely upon the stiff strands of his beard; with the other he hammered a clenched fist upon the control panel as if to lash his bewildered brain into orderly thought.

"We've got it to do but what is it that we should do? If Wiljon Kar were here, he'd be in a flurry of doing things. Commands would fly: 'Hals do this; Mardico—ah, what would his orders be for me—I have it! I can hear him almost. Wiljon Kar would say: 'Mardico, to the gun port!' By the fires of Aldebaran that is just what I shall do.

"Listen, Hals—though 'tis Mardico who speaks, think only that 'tis Wiljon Kar who commands. Blast a curve so that we nose around and are heading straight down on the plane of yonder wheel. Sweep over and completely around the rim. And as you blast the ship old Mardico'll spit the very breath of hell upon them with the X282's guns. Quick now! To action!"

Wiljon Kar toiled in frantic haste. It had taken him a good hour, possibly longer, to shunt arc finder points 29 to 32. There remained but a minute gap to complete the shorting of these electrical devices. He braced himself carefully lest the force of the shock knock him into space away from the flying transport.

He took a last fleeting glance ahead. Whoever was in charge of the ship was making a desperate drive toward the tiny planetoid, Pallis. Already the little body stood out in the bleak heavens as big as an orange to the naked eye. Yet

it was that curious ring of grayish-yellow globules slowly wheeling about Pallis which perplexed him.

Wiljon Kar grasped the steel wrench, braced himself, let it fall to complete the circuit. The W62 shuddered. For a second the wrench glowed red-hot. Wiljon Kar felt a tingling pulsation course over his body. Had it not been for the Venusite armor the shock would certainly have killed him.

But the plan worked. Torp No. 12 darkened. Swiftly the engineer blocked hands and knees with extra plates. There was no time to allow the torp muzzle to cool. Almost immediately he was worming his way up through the dark interior.

B deck was dark. Wiljon Kar shed the Venusite armor, secured an oxykelzite gun from the mechanics storage room. In close quarters this tool would serve most effectively as a weapon. But he must hurry! At the present speed of the W62 he had only an hour at the most.

Wiljon Kar sighted the squat, scaly, brown body beyond the first turn of the ramp. A massive torso upon two stumps, four snakelike prehensile things for arms and deep-set, ruby-red eyes gleaming from the small, pointed head. The startled beast hissed in its surprise, turned to charge down the ramp. Swiftly, Wiljon Kar swung the jet of the torch, pressed the stud. Vivid flame tore its lightning course through the ugly brown thing. It slumped at the engineer's feet.

The peculiar groan of the ship was a wail of agony in Wiljon Kar's ears. The W62 was screeching in frantic flight. The stench of hot oil was suffocating. Speedily, yet with caution, he wound his way, for nearly the length of the ship. Abruptly he stopped.

THE SUDDEN SILENCE was oppressive. The W62's torps had been

shut off. Wiljon Kar hesitated before the last turn along the ramp. A quick pressure caused him to topple forward against the wall. The W62 was firing a frontal discharge in order to break her forward speed. Whoever was piloting the ship was burning the power through her with no concern. The transport was vibrating tensely from the severity of the breaking force. He held the torch in readiness, rounded the turn and swung up the ramp in an awkward, lurching trot.

The flame burned its acrid streak of death before him. Two scaly bodies plunged from the doorway to the floor of the plot deck. Wiljon Kar released the stud. In one swift glance he appraised the situation. Chained helplessly to the wall were Prock and Twombly. At the far end of the deck a strange man was hunched over the W62's controls. At his back, a heat pistol in one hand and a coiled whip in the other, stood the mysterious girl. But even now she was whirling to face him, was leveling her pistol.

There was no time for meditation. Wiljon Kar's action was instinctive. The flame leaped from the jet, caught the man at the controls square between the shoulders. He crumpled forward without a groan. Yet even as he had fired, Wiljon Kar dived into the room. The girl's heat pistol seared the air above his hurtling body. Wiljon Kar had dropped the flame jet. His charging body drove across the room. Before the girl could fire again, Wiljon Kar's right arm encircled her, lifted her high in the air.

It was less than three minutes though it seemed as many hours. Prock and Twombly were freed. The lanky mechanic had a firm hold upon the struggling girl's arm.

"You won't save your ship anyway," she was screaming bitterly. "Look! al-

ready the King of Pallis has you in his clutch."

Wiljon Kar's hands drove the controls with trained skill. He was blasting a desperate arc in an attempt to cut away from the encircling mass of sinister energy. A quick glance at the ship's visor plate drained the color from his face. Dead ahead loomed the tiny sphere of rock which was the planetoid Pallis.

"The ship's dead!" Prock was shouting. "We're too late. It's those shells of energy that are whirling around the planet. That's how they snared those cargo transports from Jupiter. They deaden a ship's electrical charges—drag it down to the planetoid——"

Wiljon Kar was hammering at the lifeless controls. His lips were colorless lines in a white face. Prock was right. He was powerless to prevent the W62's slow drop down upon the tiny rock which was Pallis.

The hysterical laughter of the girl rasped upon taut nerves.

"You killed them," she was screeching. "Tondor and father were hiding in the lunar deck—we hid the scabies in the solar—you killed—killed——"

"Take her out!" Wiljon Kar was quivering. "Lock her in one of the bunks. Do something—anything to get her out of here."

Stolidly, and with set features, Twombly lifted the girl to his shoulders.

"They'll get you on Pallis," the girl screamed frantically. "You'll suffer for this. You'll never get——"

The door clicked shut upon the nerve-racking screeches of the half-crazed girl.

Visibly shaken, yet nerving himself splendidly, Prock walked over to Wiljon Kar, laid one arm across the younger man's shoulders.

"Somehow the marauders learned of the council's plan to investigate the loss of cargo ships in this region. It was a

clever plan of theirs to prevent our spoiling their little racket. And, Wiljon Kar—I fear it has worked.”

The young master engineer made no comment. Tense fingers still held to the useless controls of the W62. Dully he studied the ugly picture in the visor plate.

The grayish-yellow globes were clearly visible now. Centers of energy controlled by some maniac down there on Pallis. They were round and glossy and seemingly swelled with energy. The malefic pirate upon Pallis was using them to haul in the imprisoned transport.

“In another ten minutes——”

“Look! What’s that?”

Both engineers stared at the visor plate in open-mouthed wonder.

At the very top of the ring of energy globes, a fiery hornet of space was spitting hot destruction. One globe exploded and then another. The attacker was belching a steady beam of fire upon the ring. Globe after globe flared in vivid destruction, burst like flimsy balloons.

“It’s—it’s Mardico!” Wiljon Kar uttered the words in an awed whisper. Before their eyes the courageous and amazingly skillful old gunner was burning the very life out of the ring of energy globes.

“The controls!” Prock yelled. “See! the ship responds!”

It was true. Mardico’s destruction of the globes had cut their vicious power. The W62’s torps leaped once more into action. Wiljon Kar gunned her sharply. The hot breath of her fire-belching torps reached the barren rocks of Pallis even as W62 tore away at a tangent.

The clock indicated that fifteen Earth hours had passed. Wiljon Kar looked up from his desk. Handed the slip of paper to Hals.

“Here’s the message. Flash it to Earth at once.”

Hals read it, grinned, hastened to the flash marker’s deck. The W62 was speeding Earthward, yet before the space leaping transport, the blue flares spelled out a code to anxious observers back in Toronto.

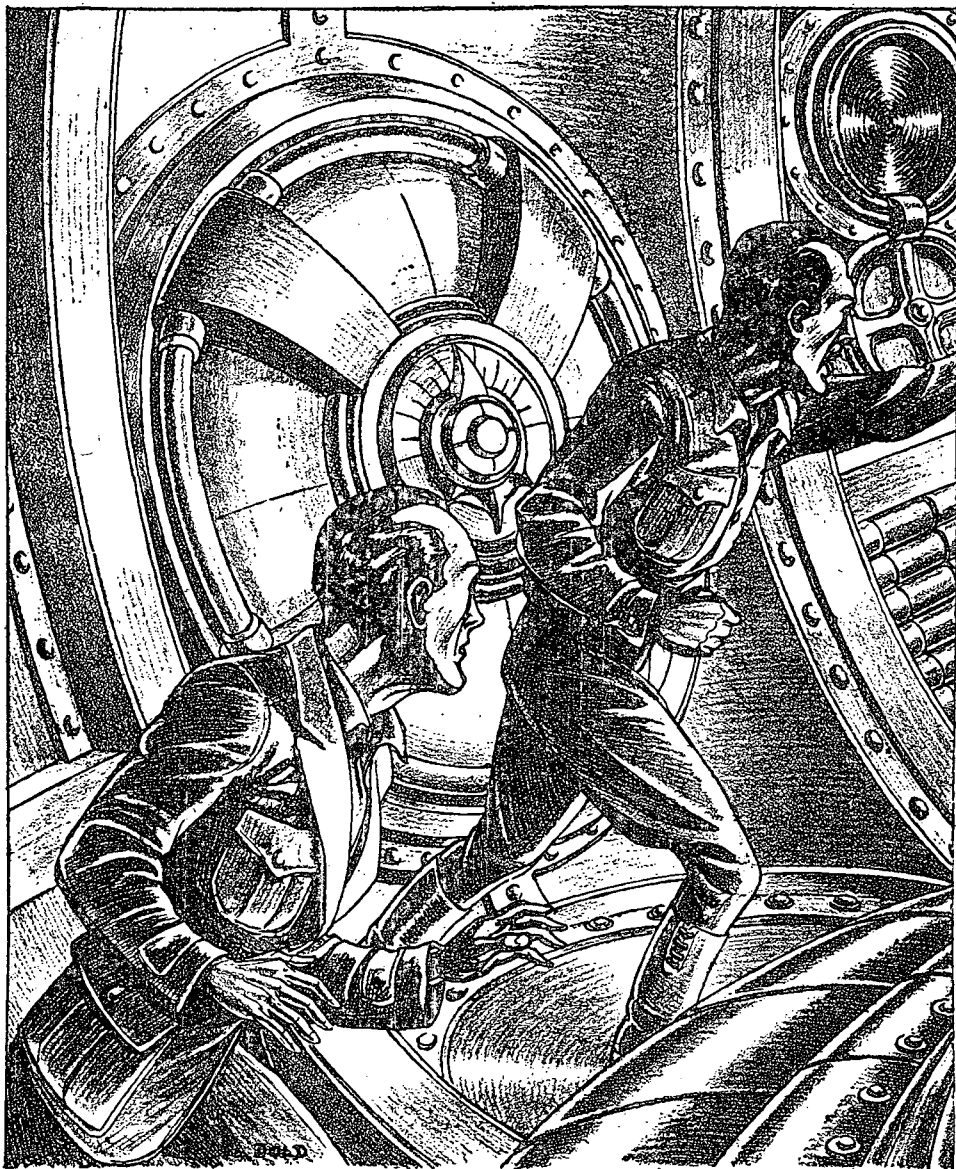
“W62 reporting. Gil Tradine, King of Pallis, on board as prisoner—also Sulla Tradine, his sister. Had operated a pirate station upon planetoid Pallis. Used ring of controlled magnetic energy to paralyze transports and plunder them upon the planetoid. Three others of the Tradine followers casualties, also, numerous Plutonian scallies, used by this pirate gang in their plundering activities. Detailed report is being prepared by Master Engineer Prock. All is well. Towing in the X282 which was used in this project. Signed, Wiljon Kar, M. E., The Flying Engineers.”

“And a jolly communication that is and one to tickle the cockles of even such stone hearts as our councilmen have,” old Mardico chuckled. “But woe is me, Wiljon Kar. ’Tis once that I’ve blasted spaceward with never a thought for proper provisions. My weechie is gone—gone, I tell you—every blessed scrap.”

“Let’s drink it off.” Mechanic Twombley was screwing at the cap of a stone of roulek. “By the sacred spots of Sol himself, let’s rejoice that the freighter X282 was at least amply supplied with roulek.”

With a smile of weariness Wiljon Kar turned his attention to the controls of the W62. They were yet a long way from Earth. But ringing through his heavier thoughts came the lusty chant of old Mardico as the huge guardsman prepared to up-end a tankard of bit-
ters.

“To the fair prisoner, says I,” old Mardico sang out. “I drink to the Princess of Pallis—confound her soul!”



The Planet of Doubt

HAMILTON HAMMOND started nervously as the voice of Cullen, the expedition's chemist, sounded from his station aft. "I see something!" he called.

Ham bent over the floor port, staring into the eternal green-gray fog that blankets Uranus. He glanced hastily

at the dial of the electric plumb; fifty-five feet, it said with an air of positiveness, but that was a lie, for it had registered that same figure for a hundred and sixty miles of creeping descent. The fog itself reflected the beam.

The barometer showed 86.2 cm. That



by Stanley G. Weinbaum

*"Something moved! Up!
Up!" Pat screamed.*

too was an unreliable guide, but better than the plumb, for the intrepid Young, four decades earlier in 2062, had noted an atmospheric pressure of 86 in his romantic dash from Titan to the cloudy planet's southern pole. But the *Gæa* was dropping now at the opposite pole, forty-five thousand miles from Young's

landing, and no one knew what vast hollows or great peaks might render his figures utterly useless.

"I see nothing," Ham muttered.

"Nor I," said Patricia Hammond, his wife—or more officially, biologist of the Smithsonian's *Gæa* expedition. "Or—yes! Something moved!" She peered

closer. "Up! Up!" she screamed. "Put up!" even, all around the planet, since it comes from within."

Harbord was a good astrogator. He asked no questions, nor even took his glance from his controls. He simply slapped the throttle; the underjets roared in crescendo, and the upward thrust pressed all of them hard against the floor.

Barely, in time. A vast gray wave of water rushed smoothly below the port, so close that its crest was carved by the blast, and spray clouded the glass.

"Whew!" whistled Ham. "That was close. Too close. If we'd touched that it would have cracked our jets for sure. They're white-hot."

"Ocean!" said Patricia disgustedly. "Young reported land."

"Yeah, forty-five thousand miles away. For all we know this sea is broader than the whole surface of the Earth."

She considered this, frowning. "Do you suppose," she asked, "that this fog goes right to the surface everywhere?"

"Young says so."

"But on Venus the clouds form only at the junction of the upper winds and the underwind."

"Yes, but Venus is closer to the Sun. The heat here is evenly distributed, because the Sun accounts for practically none of it. Most of the surface heat seeps through from within, as it does on Saturn and Jupiter, only since Uranus is smaller, it's also cooler."

"It's cool enough to have a solid crust instead of being molten like the larger planets, but it's considerably colder than the Venusian twilight zone."

"But," she objected, "Titan is as cold as a dozen Nova Zemblas, yet it's one perpetual hurricane."

He grinned. "Trying to trip me? It isn't absolute temperature that causes wind—it's differences in temperature between one place and another. Titan has one side warmed by Saturn, but here the warmth is even or practically

HE GLANCED suddenly at Harbord. "What are we waiting for?" he asked.

"For you," grunted the astrogator. "You're in command now. I command until we sight the surface, and we've just done that."

"By golly, that's right!" exclaimed Ham in a satisfied voice. On his last expedition, that to the night side of Venus, he had been technically under Patricia's orders, and the reversal pleased him. "And now," he said severely, "if the biologist will kindly step aside——"

Patricia sniffed. "So you can pilot us, I suppose. I'll bet you haven't a single idea."

"But I have." He turned to Harbord. "Southeast," he ordered, and the afterjets added their voices to the roar of the others. "Put up to thirty thousand meters," he continued, "we might run into mountains."

The *Gæa*, named for the ancient goddess of Earth who was wife to the god Uranus, plunged through the infinity of mist away from the planet's pole. In one respect that pole is unique among the Sun's family, for Uranus revolves, not like Jupiter or Saturn or Mars or the Earth, in the manner of a spinning top, but more with the motion of a rolling ball. Its poles are in the plane of its orbit, so that at one point its southern pole faces the Sun, while forty-two years later, halfway around the vast orbit, the opposite pole is Sunward.

Four decades earlier Young had touched at the southern pole; it would be another forty years before that pole again saw noon.

"The trouble with women," grumbled Harbord, "is that they ask too many questions."

Patricia spun on him. "Schopenhauer!" she hissed. "You ought to be

grateful that Patrick Burlingame's daughter is lending her aid to a Yankee expedition!"

"Yeah? Why, Schopenhauer?"

"He was a woman-hater, wasn't he? Like you!"

"Then he was a greater philosopher than I thought," grunted Harbord.

"Anyway," she retorted acidly, "a couple of million dollars is a lot of money to pay for a square mile of foggy desert. You won't hog this planet the way you tried to hog Venus."

She was referring, of course, to the Council of Berne's decision of 2059, that the simple fact of an explorer's landing on a planet did not give his nation possession of the entire planet, but only of the portion actually explored. On fog-wrapped Uranus that portion would be small indeed.

"Never mind," put in Ham. "No other nation will argue if America claims the whole fog ball, because no other nation has a base near enough to get here."

That was true. By virtue of its possession of Saturn's only, habitable moon, Titan, the United States was the only nation that could send an exploratory rocket to Uranus. A direct flight from the Earth is out of the question, since the nearest approach to the two planets is 1,700,000,000 miles. The flight is made in two jumps; first to Titan, then to Uranus.

But this condition limits the frequency of the visits enormously, for though Saturn and the Earth are in conjunction at intervals of a little over a year, Uranus and Saturn are in conjunction only once in about forty years. Only at these times is it possible to reach the vast, mysterious, fog-shrouded planet.

So inconceivably remote is Uranus that the distance to its neighbor, Saturn, is actually greater than the total distance from Saturn to Jupiter, from Jupiter to the asteroids, from these to Mars, and from Mars to the Earth. It

is a wild, alien, mystery-cloaked planet with only icy Neptune and Pluto between it and the interstellar void.

Patricia whirled on Ham. "You!" she snapped. "Southeast, eh? Why southeast? Just a guess, isn't it? Truthfully, isn't it?"

"Nope," he grinned. "I have my reasons. I'm trying to save whatever time I can, because our stay here is limited if we don't want to be marooned for forty years until the next conjunction."

"But why southeast?"

"I'll tell you. Did you ever look at a globe of the Earth, Pat? Then maybe you've noticed that all continents, all large islands, and all important peninsulas are narrowed to points toward the south. In other words, the northern hemisphere is more favorable for land formation, and as a matter of fact, by far the greater part of the Earth's land is north of the equator.

"The Arctic Ocean is nearly surrounded by a ring of land, but the Antarctic's wide open. And that same thing is true of Mars, assuming that the dark, swampy plains are old ocean beds, and also true of the frozen oceans on the night side of Venus.

"So I assume that if all planets had a common origin, and all of them solidified under the same conditions, Uranus must have the same sort of land distribution. What Young found was the land that corresponds to our Antarctica; what I'm looking for is the land that ought to surround this north polar sea."

"Ought to, but maybe doesn't," retorted Pat. "Anyway, why southeast instead of due south?"

"Because that direction describes a spiral and lessens the chance of our striking some strait or channel between lands. With a visibility of about fifty feet, it wouldn't take a very wide channel to make us think we were over ocean.

"Even your English Thames would

look like the Pacific in this sort of fog, if we happened to come down more than half a hundred feet from either bank."

"And I suppose your American Mississippi would look like Noah's flood," said the girl, and fell to gazing at the gray waste of fog that swirled endlessly past the ports.

II.

SOMEWHAT LESS than an hour later the *Gæa* was again descending gingerly and hesitantly. At 85. cm. of air pressure Ham had the rocket slowed almost to a complete stop, and thereafter it dropped on the cushioning blast of the underjets at a speed of inches per minute.

When the barometer read 85.8 cm., Cullen's voice sounded from the stern, where the port was less obscured by the jets themselves. "Something below!" he called.

There was something. The fog seemed definitely darker, and features or markings of some sort were visible. As the ship settled slowly, Ham watched intently, and at last snapped out the order to land. The *Gæa* dropped, with a faint jar, to a resting place on a bare, gray graveled plain domed with a hemisphere of mist that shut off vision as definitely as a wall.

There was something wild and alien about the limited scene before them. As the blast died, all of them stared silently into the leaden-hued vapors, and Cullen came wordlessly in to join them. In the sudden silence that followed the cutting of the blast, the utter strangeness of the world outside was thrust upon them.

Venus, where Pat had been born, was a queer enough world with its narrow habitable twilight zone, its life-teeming Hotlands, and its mysterious dark side, but it was twin sister to the Earth.

Mars, the desert planet, with its great decadent civilization, was yet stranger,

but not utterly alien. Out on the moons of Jupiter were outlandish creatures of bizarre little worlds, and on cold Titan, that circled Saturn, were fantastic beings born to that wild and frigid satellite.

But Uranus was a major planet, no more than half-brother to the little inner worlds, and less than cousin to the tiny satellites. It was mysterious, unrelated, alien; no one had ever set foot on a major planet save the daring Young and his men forty years before.

He had explored, out of all the millions of square miles of surface, just one square kilometer forty-five thousand miles away from where they stood. All the rest was mystery, and the thought was enough to subdue even the irrepressible Patricia.

But not for long. "Well," she observed finally, "it looks just like London to me. Same sort of weather we had last time we were there. I think I'll step outside and look for Piccadilly."

"You won't go out yet," snapped Ham. "I want an atmospheric test first."

"For what? Young and his men breathed this air. I suppose you're going to say that that was forty-five thousand miles away, but even a biologist knows that the law of the diffusion of gases would keep a planet from having one sort of air at one pole and another at the opposite. If the air was safe there, it is here."

"Yeah?" asked Ham. "Diffusion's all right, but did it ever occur to you that this fog-ball gets most of its heat from inside? That means high volcanic activity, and it might mean an eruption of poisonous gases somewhere near here. I'm having Cullen make a test."

Patricia subsided, watching the silent and efficient Cullen as he drew a sample of Uranian air into an ampule. After a moment she flexed her knees and asked, "Why is the gravitation so weak here? Uranus is fifty-four times as large as the Earth and fifteen times as massive,

yet I don't feel any heavier here than at home." Home to Pat, of course, was the little frontier town of Venoble, in the Venusian Cool Country.

"That's the answer," said Ham. "Fifty-four times the size of the Earth or Venus, but only fifteen times as heavy. That means its density is much smaller—to be exact, .27. Figures out to about nine-tenths the surface gravitation of the Earth, but it feels to me almost equal. We'll check a kilogram weight on the spring balance after a while and get an accurate figure on its mass."

Cullen spoke up. "Oxygen twenty-two per cent," he announced. "The rest is mostly nitrogen and argon. The argon's what causes this ghostly green color; it's in the state of the Plücker tube red spectrum, and absorbs the red light."

"Safe to breathe?"

"Perfectly. Argon's an inert gas, and a substance can't possibly be poisonous unless it can react chemically in the body."

Pat sniffed. "See? It was safe all the time. I'm going outside."

"You'll wait for me," he growled. "Every time I've indulged that reckless disposition of yours you've got into trouble." He checked the thermometer beyond the port; nine degrees centigrade—the temperature of late autumn back home. "There's the cause of this perpetual fog," he observed. "The surface is always warmer than the air."

PAT WAS already pulling a jacket over her shoulders. Ham followed suit, and fell to twisting the handle of the air lock. There was a subdued hissing as the slightly denser Uranian air forced its way in, and he turned to speak to Harbord, who was lighting a pipe with great satisfaction—an indulgence strictly forbidden in space, but harmless now that an air supply was assured.

"Keep an eye on us, will you?" Ham

said. "Watch us through the port, just in case something happens and we need help."

"We?" grunted Harbord. "Your wife's out of sight already."

With a muttered imprecation, Ham spun around. It was true. The outer door of the air lock was open, and a lazy wisp of fog drifted in, scarcely moving in the utterly stagnant Uranian air.

"The crazy little—— Here! Give me that!" He seized a belt with twin holsters, holding a standard automatic as well as a terribly destructive flame pistol. He whipped it around him, seized another bundle, and plunged into the eternal mists of Uranus.

It was exactly as if he stood under an inverted bowl of dull silver. A weird, greenish, half twilight filtered down, but his whole world consisted of the metal ship at his back and a fifty-foot semicircle before him. And Pat—Pat was nowhere visible.

He shouted her name. "Pat!" The sound, muffled by the cold dampness of the fog, sounded queerly soft to his ears. He bellowed again at the top of his voice, and then swore violently from sheer relief as a thin, hushed reply drifted back out of the grayness.

In a moment she appeared, swinging a zigzag, ropy, greenish-gray organism.

"Look!" she called triumphantly. "Here's the first specimen of Uranian plant life. Loosely organized, reproduces by partition, and—what the devil is the matter?"

"Matter! Don't you know you might have been lost? How did you expect to get back here?"

"Compass," she retorted coolly.

"How do you know it works? We may be right on the magnetic pole, if Uranus has one."

She glanced at her wrist. "Come to think of it, it doesn't work. The needle's swinging free."

"Yes, and you went out unarmed besides. Of all fool tricks!"

"Young reported no animal life, didn't he? And—wait a minute. I know what you're going to say. 'Forty-five thousand miles away!'"

He glared. "Hereafter," he growled, "you're under orders. You don't go out except in company, and roped together." He drew a length of heavy silken cord from his pocket, and snapped one end to her belt, and the other to his own.

"Oh, don't be so timid! I feel like a puppy on a leash."

"I have to be timid," he responded grimly, "when I'm dealing with a reckless, improvident, careless imp like you."

He disregarded her sniff of disapproval, and set about unwrapping the bundle he had brought. He produced an American flag, and proceeded to dig a depression in the gravel, planted the staff in it and said formally, "I take possession of this land in the name of the United States of America."

"All fifty feet of it?" murmured Patricia, but softly, for, after all, despite her flippant manner, she was loyal to the country of her husband. She fell silent, and the two of them stared at the flag.

It was a strange echo from a pleasant little planet nearly two billion miles away; it meant people and friends and civilization—things remote and almost unreal as they stood here on the soil of this vast, lonely, mysterious planet.

Ham roused from his thoughts.

"So!" he said. "Now we'll have a look around."

YOUNG had indicated the technique of exploration on this world where the explorer faced difficulties all but insurmountable.

Ham snapped the end of a fine steel wire to a catch beside the air lock. On a spool at his waist was a thousand foot length of it, to serve as an infallible

guide back through the obscurity—the only practical means in a region where sound was muffled and even radio waves were shielded almost as completely as by a grounded metal dome. The wire played the part not only of guide but of messenger, since a tug on it rang a bell within the rocket.

Ham waved at Harbord, visibly puffing his pipe behind the port, and they set out. To the limit of their permitted time, Uranus would have to be explored in thousand-foot circles, moving the rocket each time the details of the area were recorded. A colossal task. It was likely, he remarked to Pat, that the vast planet would never be completely explored, especially with the forty-year interval that must pass between visits.

"And especially," she amended, "if they send timorous little better-be-safethan-sorry explorers like you."

"At least," he retorted, "I expect to return to tell what I've explored, even if it's only a myriare, like Young's achievement."

"But don't you see," she rejoined impatiently, "that wherever we go, just beyond our vision there may be something marvelous? We take little thousand-foot samples of the country, and each time we might be just missing something that may be the whole significance of this planet. What we're doing is like marking off a few hundred-foot circles on the Earth; how much chance is there of finding part of a city, or a house, or even a human being in our circle?"

"Perfectly true, Pat, but what can we do about it?"

"We could at least sacrifice a few precautions and cover a little more territory."

"But we won't. I happen to care about your safety."

"Oh!" she said irritably, turning away. "You're——" Her words were muffled as she ranged out to the full length of the silken cord that bound her

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to him. She was completely invisible, but occasional jerks and tugs as they tried to move at cross-purposes were evidence enough that they were still joined.

Ham walked slowly forward, examining the pebbled, lifeless terrain where now and then a pool of condensed moisture showed dull, and very occasionally, he came upon one of the zigzag weeds like the one Pat had dropped near the rocket. Apparently rain was unknown on windless Uranus, and the surface moisture followed an endless cycle of condensation in the cool air and evaporation on the warm ground.

III.

HAM came to a spot where boiling mud seemed to be welling up from below, and steamy plumes whirled up to lose themselves in the fog—evidence of the vast internal heat that warmed the planet. He stood staring at it, and suddenly a violent jerk on the cord nearly toppled him backward.

He spun around. Patricia materialized abruptly out of the fog, one hand clutching a ropy plant. She dropped it as she saw him, and suddenly she was clinging frantically to him.

"Ham!" she gasped. "Let's go back! I'm scared!"

"Scared? Of what?" He knew her character; she was valiant to the point of recklessness against any danger she could understand, but let there be a hint of mystery in an occurrence, and her active imagination painted horrors beyond her ability to face.

"I don't know!" she panted. "I—I saw things!"

"Where?"

"In the fog! Everywhere!"

Ham disengaged his arms and dropped his hands to the butts of the weapons in his belt. "What sort of things?" he asked.

"Horrible things! Nightmarish things!"

He shook her gently. "Who's timid now?" he asked, but kindly. The query had the effect he sought; she gripped herself and calmed.

"I'm not frightened!" she snapped. "I was startled. I saw——" She paled again.

"Saw what?"

"I don't know. Shapes in the mist. Great moving things with faces. Gargoyles—devils—nightmares!" She shuddered, then calmed once more.

"I was bending over a little pool out there, examining a biopod, and everything was quiet—sort of deadly quiet. And then a shadow passed in the pool—a reflection of something over me—and I looked up and saw nothing. But then I began to hear rustles and murmurs and noises like muffled voices and I began to see the fog shapes—horrible shapes—all around me. And I screamed, and then realized you couldn't hear a scream, so I jerked the rope. And then I guess I just closed my eyes and rushed through them to you." She shivered against him.

"All around you?" he asked sharply. "Do you mean between you and me?" She nodded. "Everywhere."

Ham laughed shortly. "You've had a day dream, Pat. The rope isn't long enough for anything to pass between us without coming so close to one of us that he could see it clearly, and I saw absolutely nothing—*absolutely* nothing."

"Well, I saw something," she insisted, "and it wasn't imaginary. Do you think I'm just a nervous child afraid of strange places? Why, I was born on an alien planet!" At his indulgent grin she flared in indignation. "All right! Let's both of us stand here perfectly quiet; perhaps they'll come back again; then we'll see what you think of them."

He nodded agreement, and they stood

silently under the translucent dome of mist. There was nothing, nothing but a deep and endless grayness and an infinite silence, but a silence not like any Ham had ever experienced in his life. For on Venus—even in the sultriest part of the Hotlands—there is always the rustle of teeming life, and the eternal moaning of the underwind, while on the Earth no day nor night is ever quite silent.

There is always somewhere the sighing of leaves or the rustle of grass or the murmur of water or the voices of insects, or even in the driest desert, the whisper of sand as it warms or cools. But not here; here was such utter stillness that the girl's breathing beside him was an actual relief; it was a silence utter enough to hear.

He did hear it—or was it simply his own blood pulsing in his ears, A formless throbbing, an infinitely faint rustling, a vague whispering. He frowned in the concentration of listening, and Patricia quivered against him.

"There!" she hissed. "There!"

He peered into the gray dimness. Nothing at all—or was there something? A shadow—but what here could cause a shadow, here in this sunless region of fog? A condensation of mist, that was all. But it moved; mist can't move without the thrust of wind, and here there was no wind.

HE STRAINED his eyes in an effort to pierce the obscurity. He saw—or he imagined it—a vast, looming figure, or a dozen figures. They were all around; one passed silently overhead, and numberless others weaved and swayed just beyond the range of vision. There were murmurings and susurrations, sounds like breathing and whispering, patters and rustles. The fog shapes were weirdly unstable, looming from little patches of darkness into towering shadows, dissipating and forming like figures of smoke.

"Good Lord!" gasped Ham. "What can——"

He tried to focus his gaze on one individual in the shadowy throng. It was difficult; they all seemed to shift, to merge, advance, recede, or simply materialize and fade out. But one surprising phenomenon suddenly caught his attention, and for a moment stunned him into rigidity. He saw faces!

Not exactly human faces. They were more such appearances as Patricia had described—the faces of gargoyles or devils, leering, grimacing, grinning in lunatic mirth or seeming to weep in mockery of sorrow. One couldn't see them clearly enough for anything but fleeting impressions—so vague and instantaneous that they had the qualities of an illusion or dream.

They must be illusions, he thought confusedly, if only because their conformations, though not human, imitated the human. It was beyond the bounds of reason to suppose that Uranus harbored a race of humans, or even human-like beings.

Beside him Patricia whimpered, "Let's go back, Ham. Please let's go back."

"Listen," he said, "those things are illusory, at least in part."

"How do you know?"

"Because they're anthropomorphic. There can't be any creatures here with nearly human faces. Our own minds are adding details that don't exist, just as every time you see a cloud or a crack on the ceiling you try to make a face out of it. All we're seeing is denser spots in the mist."

"I wish I thought you were sure of that," she quavered.

He wasn't at all sure, but he reaffirmed it. "Of course I am. I'll tell you an easy way to prove it, too. We'll turn the infra-red camera on them, and that'll bring out enough detail to judge by."

"I'd be afraid to look at the plates,"

said the girl, shivering as she peered apprehensively at the vague horrors in the fog. "Suppose—suppose they do show those faces. What will you say then?"

"I'll say that it's a queer and unexpected coincidence that Uranian life—if they are forms of life—has developed along somewhat the same lines as terrestrial—at least in outward form."

"And you'll be wrong," she murmured. "A thing like this is beyond coincidence." She trembled against him. "Do you know what I think? Ham, do you suppose it's possible that science has gone all wrong, and that Uranus is Hell? And that those are the damned?"

He laughed, but even his laugh sounded hollow, muffled by the smothering fog. "That's the maddest idea that even your wild imagination has ever produced, Pat. I tell you they're——"

A scream from the girl interrupted him. They had been standing huddled together, staring at divergent angles into the dome of mist, and he spun around instantly now to gaze in the direction she faced.

For a moment his vision was blinded by the shift, and he blinked frantically in an effort to focus his eyes. Then he saw what had startled her. It was a vast, dusky shadow that seemed to originate somewhere near the surface, but was springing upward and curving over them as if it actually climbed a veritable dome of mist, like a dim river of darkness flowing upward.

Despite his derision of Patricia's fear-born imaginings, his nerves were taut. It was a purely automatic gesture that brought his weapon to his hand, and it was pure impulse that sent a bullet flaming into the mist. There was a curiously muffled report from the shot—a single dull echo—and then utter silence.

Utter silence. The rustles and murmurings were gone—and so were the fog shapes. Blinking into the mist, they

saw only the sullen grayness of the eternal cloud itself, and they heard no sound but their own tense breathing and the faint after-ring of their eardrums from the concussion.

"They're gone!" the girl gasped.

"Sure. Just what I said. Illusions!"

"Illusions don't run away from gunshots," retorted Patricia, her courage revived instantly with the vanishing of the fog shapes. "They're real. I'm not nearly as afraid of real things as of—well, of things I can't understand."

"Do you understand these?" he rejoined? "And as for illusions not running away from gunshots, I say they might. Suppose these appearances were due to a sort of self-hypnosis, or even merely to the eye strain of staring through this fog. Don't you think a shot would startle us out of the proper mental state, so that we'd no longer see them?"

"Maybe," she said doubtfully. "Anyway, I'm not scared any more. Whatever they are, I guess they're harmless."

She turned her attention to the puddle of hot mud before them, in which a few curious feathery growths swayed to the bubbling of the surface. "Cryptogamoid," she said, stooping over them. "Probably the only sort of plant that can exist on Uranus, since there's no sign of bees, or other pollen carriers."

Ham grunted, peering into the dismal gray mist. Suddenly both of them were startled into sudden alertness by the sound of the bell on the drum that held the guide wire. One ring; a warning from the *Gæa*!

PAT sprang erect. Ham tugged the wire in instant reply, and muttered, "We'd better go back. Harbord and Cullen must have seen something. It's probably the same sort of things we saw, but we'd better go back."

They began to retrace their steps, the thousand feet of wire humming softly as it wound back on the spring drum

at Ham's waist. Other than that and the crunch of their steps on the gravel, there was silence, and the fog was merely a featureless dome of faintly greenish grayness. They had progressed perhaps two hundred yards when it changed.

Patricia saw the fog shapes first. "They're back!" she hissed in his ear, with no sound of fear in her voice now.

IV..

HE SAW them too. Now they were no longer surrounding the two of them, but were rushing past from the direction of the *Gaa* in two parallel streams, or perhaps dividing into two streams just beyond the point of visibility. He and Pat were moving down an alley walled by a continuous double line of rushing shadows.

They huddled closer to each other and bored on through the fog. They were no more than a hundred and fifty feet from the rocket now. And then, with a suddenness that brought them to a sharp halt, something more solid than fog, more solid than fog shapes, loomed darkly straight before them.

It—whatever it was—was approaching. It was visible now as a dark circle at the level of the ground, perhaps six feet in diameter, upright and broadside on. It was moving as fast as a man walks, and it materialized rapidly into a distinct solidity.

Ham and Pat stared fascinated. The thing was featureless—just a dull black circle and a tubular body that stretched off into the fog. Or not quite featureless. Now they could perceive an organ that projected from the center of the circle—a loose, quivering member like a large pancake on a finger-thick stem, whose edges quivered and cupped toward them, as if to catch sounds or scent. The creature was blind!

Yet it possessed some sense that could register distant objects. Thirty feet

from them the stalked disc cupped deeply in their direction, the creature swerved slightly, and rushed silently toward the pair!

Ham was ready. His automatic roared its muffled blast, and roared again. The attacker seemed to telescope in upon itself and rolled aside, and behind it appeared a creature identical in all respects—the same featureless black circle, the same quivering disc. But a high, piercing whine of pain slipped like a sharp knife through the fog.

This was a danger Patricia could understand. There was no fear about her now; she had faced too many outlandish creatures on the Hotland frontiers of Venus, or in the mysterious wilds of the Mountains of Eternity.

She snatched her companion's flame pistol from its holster and stood with the weapon ready to vomit its single blast of destruction. She knew that it represented a last resort, not to be used until other means had failed, so she simply held it, and tugged on the wire to the *Gaa*. Three pulls, and then again three, would summon aid from Cullen and Harbord.

The second creature—or was it another segment of the same animal?—came charging forward. Ham sent two more bullets into the blank, faceless front of it, and again that keening note of pain sounded. The monster swerved and collapsed, and another black circle was rushing toward them. His shot failed to drop this one, but the creature veered.

Suddenly the thing was roaring, past them, black and huge as a railroad train. It was a segmented being; it was composed of dozens of eight-foot links, like a train of miniature cars, three pairs of legs to a section.

But it ran like a single creature, with ripples of motion flowing back along its countless legs in exactly the way a centipede runs. Ham had a flashing glimpse of the manner in which the segments



As he sent the bullets crashing into the line of featureless, black creatures, a monster would swerve—collapse—another take its place—

were joined by finger-thick ropes of flesh.

He sent three bullets into the middle of a passing section. It was a bad mistake; the segment spouted black liquid and rolled out of line, but the one behind it suddenly turned its stalked member toward the two defenders and came rushing at them. And off in the fog the first section was circling back. They had two to face now instead of one.

Ham had three cartridges left in the

clip. He grimly fired one shot full at the quivering disc of flesh that cupped toward him, saw the monster collapse, and sent another bullet into the segment that followed. The thing—or things—seemed to extend indefinitely into the fog.

Beside him he heard the roar of the flame pistol. Pat had waited until the other monster was nearly upon her; so that her single blast might do as much damage as possible.

Ham stole time for a momentary glance at the result; the terrific discharge had simply incinerated a dozen segments, and one solitary survivor was crawling away into the fog.

"Good girl!" he muttered and sent his last bullet into the onrushing monstrosity. It dropped, and behind it, driving inexorably on, came the follower. He flung his empty weapon at the fleshy disc, saw it bound off the black skin, and waited, thrusting Pat behind him.

THERE WAS a great, roaring light. A flame pistol! Dim in the fog were the figures of Harbord and Cullen, tracing their way along the wire, and before him were writhing segments of the blasted monster.

What remained of the creature had had enough punishment, apparently, for it veered to the left and went thundering away into the mist, now no more than ten segments long. And all around the group, just beyond visibility, the fog shapes gestured and grimaced and gibbered, and then they too vanished.

Not a word was spoken as the four traced the wire to the door of the *Gaa*. Once within, Patricia let out a low whistle of relief as she pulled off her dripping jacket.

"Well!" she breathed. "That was a thrill."

"A thrill!" snorted Ham. "Say, you can have this whole soggy planet for all of me. And I've a mind to limit you to the ship, too. This is no place for a thoughtless imp like you; you draw trouble the way honey draws flies."

"As if I had anything to do with it!" she retorted. "All right; order me to stay aboard if you think it'll do any good."

He grunted and turned to Harbord. "Thanks," he said. "That was close until you two showed up. And by the way, what was the warning for? The fog shapes?"

"Do you mean that Mardi Gras parade that's been going by?" asked Harbord. "Or was it a spiritualist convention? No; we weren't sure they were real. It was for the thing you did get tangled up with; it came humping by here in your direction."

"It or they?" corrected Ham.

"Did you see more'n one of them?"

"I *made* more than one of them. I cut it in half, and both halves went for us. Pat took care of one with the flame pistol, but all my bullets seemed to do was to knock off pieces." He frowned. "Do you understand the thing, Pat?"

"Better than you do," she retorted sharply. His threat to restrain her to the ship still rankled. "This would be a fine expedition without a biologist, wouldn't it?"

"That's the reason I'm being careful about you," he grinned. "I'm afraid it would be without a biologist. But what's your idea concerning that series of detachable worms out there?"

"Just that. It's a multiple animal. Did you ever hear of Henri Fabre?"

"Not that I remember."

"Well, he was a great French naturalist of about two centuries ago. Among other things, he studied some interesting little insects called processionary caterpillars, who spin themselves a cozy nest of silk and march out of it every night to feed."

"Well?"

"Just listen a moment," said the girl. "They march out single file, every caterpillar touching its head to the tail of the one preceding it. They're blind, you see; so each one trusts the one ahead. The first one's the leader; he picks the route, leads them to the proper tree, and there the column breaks up for feeding. And at sunrise, they form again into little columns, which join again into the big procession, and back they go to their nest."

"I still don't see——"

"You will. Now, whichever cater

pillar is in front is the leader. If you take a stick and break the column at any point, the one behind the gap becomes leader for his followers, and leads them back to the cobweb nest just as efficiently as the original leader. And if you segregate any one caterpillar, he finds his own way, being leader and column in one."

"I begin to see," muttered Ham.

"Yes. That thing—or those things—are something like the processionary caterpillars. They're blind; in fact, eyes would have much less value on Uranus than on the Earth, and perhaps no Uranian creatures developed eyes—unless the fog shapes possess them. But I think these creatures are a long way ahead of the processionaries, because the caterpillars establish their contact along a thread of silk, but these fellows, apparently, do it through actual nerve ganglia."

"Eh?" queried Ham.

"Of course. Didn't you notice how they were joined? That flat organ in front—each one had it slapped like a sucking disc against the one before him—was always placed in identically the same position. And when you shot one out of the middle of the file, I saw the pulpy lump it had covered on the one it followed. And besides——" She paused.

"Besides what?"

"WELL, didn't it strike you as strange that the whole line coöperated so well? Their legs moved in a sort of rhythm, like the legs of a single creature, like the legs of a myriapod—a centipede.

"I don't think habit or training or discipline could ever account for the way that file of creatures acted, rushing and stopping and veering and circling, all in perfect unison. The whole line must have been under the direct neutral control of the leader—hearing and smelling what he heard and smelled,

even, perhaps, responding to his desires, hating with him and finally fearing with him!"

"Damned if I don't think you're right!" exclaimed Ham. "The whole bunch of them acted like one animal!"

"Until you carelessly created two by breaking the line," corrected the girl. "You see——"

"I made another leader!" finished Ham excitedly. "The one behind the break in the file became a second leader, able to act independently." He frowned. "Say, do you suppose those things accumulate their intelligences when they join? Does each one add his reasoning power—if any—to the dominating brain of the leader?"

"I doubt it," said the girl. "If that were true, they would be able to build up a colossal intellect just by adding more sections. No matter how stupid each individual might be, they'd only have to click together enough of them to create a godlike intelligence.

"If anything like that existed here, or ever had existed, they wouldn't be rushing around weaponless and savage. There'd be some sort of civilization, wouldn't there? But," she added, "they might pool their experience. The leader might have all the individual memories at his disposal, which wouldn't add a darn thing to his reasoning powers."

"Sounds plausible," agreed Ham. "Now as to the fog shapes. Have you figured out anything about them?"

She shuddered. "Not much," she confessed. "I think there's a relationship between them and these others, though."

"Why?"

"Because they came streaming by us just before the attack. They might have been simply running away from the multiple creature, but in that case they ought to have scattered. They didn't; they came rushing by in two distinct streams, and not only that, but all during the fight they were flickering and shimmer-

ing in the background. Didn't you notice that?"

"My attention was occupied," replied Ham dryly. "But what about it?"

"Well, did you ever hear of the indicator *albirostris*—the honey-guide?"

"It sounds vaguely familiar."

"It's an African bird of the cuckoo family, and it guides human beings to the wild bee colonies. Then the man gets the honey and the bird gets the grubs." She paused. "I think," she concluded, "that the fog shapes played honey-guide to the others. I think they led the creatures to us either because your shot angered them, or because they wanted the leavings after the others were through with us, or because they're just plain destructive. Anyway, that's my guess."

"If they're real," added Ham. "We'll have to turn the infra-red camera on the next group or herd or swarm or flock, or whatever you call their gatherings. I still think they're mostly illusory."

She shuddered. "I hope you're right," she murmured.

"Bah!" said Harbord suddenly. "Women don't belong in places like this. Too timid."

"Yeah?" retorted Ham, now fully prepared to defend Patricia. "She was cool enough to notice details during that fracas out there."

"But afraid of shadows!" grumbled Harbord.

V.

HOWEVER, they weren't shadows. Some hours later Cullen reported that the fog around the *Gæa* was full of shifting, skittering shapes, and he trundled the long-wave camera from port to port.

Handicapped by the argon-laden air with its absorption spectrum that filtered out long rays, the infra-red plates were nevertheless more sensitive than the

human eye, though perhaps less responsive to detail. But a photographic plate is not amenable to suggestion; it never colors what it sees by the tint of past experience; it records coldly and unemotionally the exact pattern of the light rays that strike it.

When Cullen was ready to develop his plates, Patricia was still asleep, tired out by the hectic first day on the planet, but Ham came out drowsily to watch the results.

These might have been less than she feared, but they were more than Ham expected. He squinted through a negative toward the light, then took a sheaf of prints from Cullen, frowning down at them.

"Humph!" he muttered. The prints showed something, beyond doubt, but something not much more definite than the unaided eye. Indubitably the fog shapes were real, but it was equally certain that they weren't anthropomorphic.

The demoniac faces, the leering visages, the sardonic countenances, were decidedly absent to the eye of the camera; to that extent the beings they had seen were illusions, whose features had been superimposed by their own minds on the shadows in the fog. But only to that extent, for behind the illusion lay something unmistakably real. Yet what physical forms could achieve that flickering and shifting and change of shape and size that they had observed?

"Don't let Pat see these unless she asks to," he said thoughtfully. "And I think I'll confine her to the ship for the present. Judging from the couple of acres we've seen so far, this place isn't the friendliest sort of locality."

But he figured without the girl on both counts. When, fifteen hours later, he moved the rocket a mile south and prepared for another circuit in the fog, she met his order with a storm of protest.

"What's this expedition for?" she demanded. "The most important thing on a planet is the life it supports, and that's a biologist's business, isn't it?"

She turned indignant eyes on Ham. "Why do you think the Institute chose me for this job? Just to sit idly in the rocket while a couple of incompetents look around—a chemist and an engineer who don't know an epiphyte from a hemipteron?"

"Well, we could bring in specimens," muttered Ham miserably.

That brought a renewed storm. "Listen to me!" she snapped. "If you want the truth, I'm not here because of you. You're here because of me! They could have found a hundred engineers and chemists and astrogators, but how many good extraterrestrial biologists? Darn few!"

Ham had no ready reply, for it was quite true. Despite her youth, Patricia, born on Venus and educated in Paris, was admittedly preëminent in her field. Nor, in all fairness to the backers of the expedition, could he handicap her in her work. After all, not even the government-financed Smithsonian could afford to spend somewhat over two million dollars without getting fair return for its money.

Sending a rocket out into the depths where Uranus plowed its lonely orbit was a project so expensive that in simple justice the expedition had to do its utmost, especially since forty long years would elapse before another opportunity to visit the doubtful planet. So he sighed and yielded.

"That shows a faint glimmering of intelligence," said Patricia. "Do you think I'm afraid of some animated links of sausages? I won't make the mistake of cutting them in the middle. And as for those funny-faced shadows, you said yourself that they were illusions, and—by the way, where are the pictures you were going to take of them? Did they show anything?"

Cullen hesitated, then at Ham's resigned nod, he passed her the sheaf of prints. At the first glance she frowned suddenly.

"They're real!" she said, and then bent over them with so intent an expression that Ham wondered what she could read from so vague and shadowy a record. He saw, or fancied he saw, a queer gleam of satisfaction in her eyes, and felt a sensation of relief that at least she wasn't upset by the discovery.

"What d'you make of them?" he asked curiously.

She smiled and made no answer.

APPARENTLY Ham's fears concerning Patricia were ill-founded on all counts. The days passed uneventfully; Cullen analyzed and filed his samples, and took innumerable tests of the greenish Uranian atmosphere; Ham checked and rechecked his standard weights, and in spare moments examined the reaction motor on which the *Gæa* and their lives depended; and Patricia collected and classified her specimens without the least untoward incident.

Harbord, of course, had nothing to do until the rocket plunged once more into the vastness of space, so he served as cook and general utility man—an easy enough task consisting largely of opening cans and disposing of the debris.

Four times the *Gæa* soared aloft, picked her way through the eternal mists to a new station, and settled down while Ham and Patricia explored another thousand-foot circle. And somewhere in the grayness above, forever invisible, Saturn swung into conjunction, passed the slower-moving Uranus, and began to recede. Time was growing short; every hour meant additional distance to cover on the return.

On the fifth shift of position, Harbord announced the limit of their stay. "Not more than fifty hours more," he warned, "unless you have an inclination to spend the next forty years here."

"Well, it's not much worse than London," observed Ham, pulling on his outdoor clothing. "Come on, Pat. This'll be our last look at the pleasant Uranian landscape."

She followed him into the gray open, waiting while he clicked his guide wire to the rocket, and the silken rope to her belt. "I'd like to get one more look at our chain-gang friends," she complained. "I have an idea, and I'd like to investigate it."

"And I hope you don't," he grunted. "One look was plenty for me."

The *Gæa* disappeared in the eternal mist. Around them the fog shapes flickered and grimaced as they had done ever since that first appearance, but neither of them paid any attention now. Familiarity had removed any trace of fear.

This was a region of small stony hillocks, and Patricia ranged back and forth at the full length of the rope, culling, examining, discarding, or preserving the rare Uranian flora. Most of the time she was beyond sight or sound, but the cord that joined them gave evidence of her safety.

Ham tugged impatiently. "Like leading a puppy past a row of trees," he growled as she appeared. "Wire's end!" he called. "We'll circle back."

"But there's something beyond!" she cried. By virtue of the rope she could range an additional fifty feet into the obscurity. "There's something growing just out of reach there—something new! I want to see it."

"Hell, you can't. It's out of reach and that's that. We can lengthen the wire a little and come back for it."

"Oh, it's just a few feet." She turned away. "I'll release the rope, take a look, and come right back."

"You won't!" he roared. "Pat! Come here!"

He tugged mightily on the rope. A faint exclamation of disgust drifted out of the dimness, and then, suddenly, the

rope came free in his hands. She had freed herself!

"Pat!" he bellowed. "Come back! Come back, I say!"

A smothered reply sounded, all but inaudible. Then there was utter silence.

He shouted again. The all-enveloping fog muffled his voice in his own ears. He waited a moment, then repeated his call. Nothing; no sound but the rustle of the fog shapes.

He was in a desperate quandary. After another pause he fired his revolver into the air, all ten shots at brief intervals. He waited, then fired another clip without response from the passive, leaden-hued fog. He swore bitterly at the girl's foolhardiness, at his own helplessness, and at the grimacing fog shapes.

He had to do something. Go back to the *Gæa* and set Harbord and Cullen searching. That wasted precious time; every moment Patricia might be wandering blindly away. He muttered a phrase that might have been either an imprecation or a prayer, pulled a pencil and a piece of paper from his pocket, and scrawled a message: "Pat lost. Bring additional spool and attach to wire. Circle for me. Will try to stay within two-thousand-foot radius."

He clipped the paper to the wire's end, weighted it with a stone, and then tugged three times to summon the two from the *Gæa*. Then he deliberately released himself and plunged unguided into the fog.

HE NEVER KNEW how far or how long he walked. The fog shapes gibbered and mocked him, the condensation gathered on his face and dripped from his nose and chin, the fog pressed in about him. He shouted, he fired his automatic; he whistled, hoping that the shriller sounds might carry, he zigzagged back and forth across his route. Surely, he thought, Pat had sense enough not to wander. Surely a girl trained in the

Hotlands of Venus knew that the proper procedure when lost was to remain still, lest one stray still farther from safety.

Ham himself was utterly lost now. He had no faintest conception of where the *Gæa* lay, nor in what direction was the guiding wire. Now and again he thought he spied the silver filament of safety, but each time it was only the glint of water or the dull sparkle of stone. He moved under an inverted bowl of fog that blocked off vision on every hand.

In the end it was the very weakness of the lost that saved him. After hours of hopeless plunging through the mist, he tripped—actually tripped—over the wire. He had circled.

Cullen and Harbord loomed suddenly beside him, joined by a silken rope. He gasped, "Have you—have you—"

"No," said Harbord gloomily, his lined visage looking bleak and worn. "But we will. We will."

"Say," said Cullen, "why don't you go aboard and rest up? You look about done in, and we can carry on for you."

"No," said Ham grimly.

Harbord was unexpectedly gentle. "Don't worry," he said. "She's a sensible sort. She'll stay put until we find her. She can't have wandered a full thousand feet beyond the wire's end."

"Unless," responded Ham miserably, "she was driven—or carried."

"We'll find her," repeated Harbord.

But ten hours later, after they had completely circled the *Gæa* at a dozen different distances, it became obvious that Patricia was not within the circumference described by their two-thousand-foot wire. Fifty times during the intolerable circuit Ham had fought against the impulse to free himself of the wire, to probe just a little farther into the tantalizing fog.

She might be sitting despondently just beyond sight and earshot, or she might be lying injured within an easy stone's throw of the circle, and they'd

never know it. Yet to release himself from the one guide that marked their base was little better than suicide and somewhat more than sheer insanity.

When they reached the stake that Cullen had driven to mark their starting point, Ham paused. "Back to the ship," he ordered grimly. "We'll move her four thousand feet in this direction and circle again. Pat can't have wandered that far away. That'll give us nearly a mile from the point I lost her."

"We'll find her," reiterated Harbord.

But they didn't find her. After a futile, exhausting search, Ham ordered the *Gæa* to a point at which their wire-bound circle was tangent to the two circles already explored, and grimly began again.

Thirty-one hours had passed since the girl had disappeared, and the three were nearing exhaustion. It was Cullen who yielded first, and groped his way wearily back to the ship. When the other two returned to move to a new base, they found him sleeping fully clothed beside a half-drained cup of coffee.

VI.

THE HOURS dropped slowly into eternity. Saturn was pulling steadily ahead of the misty planet, bound placidly for their next meeting forty years in the future. Harbord said not a word concerning the passing of time; it was Ham who broached the subject.

"Look here," he said as the *Gæa* slanted down to a new position. "Time's short. I don't want you two marooned here, and if we don't find Pat in this area, I want you and Cullen to leave. Do you understand?"

"I understand English," said Harbord, "but not that sort."

"There's no reason for you two to stay. I'm staying. I'll take our portion of food and all the arms and ammunition, and I'll stay."

"Bah!" growled Harbord. "What's forty years?" He had turned sixty.

"I'm ordering you to leave," said Ham quietly.

"You don't command once we're clear of the surface," grunted the other. "We're staying. We'll find her."

But it began to seem utterly hopeless. Cullen awoke and joined them as they emerged into the infinite fog, and they took their places at six hundred and sixty foot intervals along the wire. Ham took the outermost position and they began their endless plodding through the mists.

He was close to the breaking point. For forty hours he had neither slept nor eaten, save for a hurried gulp of coffee and a bite of chocolate when they moved the *Gaa*. The fog shapes were beginning to take the weirdest conformations in his tired eyes, and they seemed to loom ever closer, and to grin more malevolently.

So it was that he had to blink and squint and peer very closely when, a quarter way around the circuit, he saw something a little denser than the fog shapes in the gloom.

He jerked the wire once to halt Harbord and Cullen, and stared fixedly. There was a sound, too—a faint, steady thrumming quite different from the eerie rustles of the fog shapes. He started sharply as he heard still another sound, indescribable, muffled, but certainly a physical sound. He jerked the wire three times; that would summon his companions.

They came, and he pointed out the dusky mass. "We can reach it," he suggested, "if we tie a couple of our ropes together. Two should be plenty."

They moved cautiously into the mist. Something—something was stirring there. They crept quietly on, fifty feet, sixty. And suddenly Ham realized that he saw a chain of the multiple creatures—a vast chain, apparently, for it was still passing before them. In utter

despondency he stopped, staring hopelessly ahead; then, very slowly, he turned back toward the wire.

A sound—a sharp sound—froze him. It sounded like a cough!

He whirled back. Regardless of the dangerous file close before him, he shouted. "Pat!" Pat!"

The sublimity of relief! A thin little voice quavered beyond the line. "Ham! Oh, Ham!"

"Are you—are you safe?"

"Y-yes."

He was at the very side of the passing file. Beyond, pale as the mist itself, was Patricia, no more than ten feet away.

"Thank God!" he muttered. "Pat, when this chain passes, run straight here. Don't move a single step aside—not a single step!"

"Passes?" she quavered. "Oh, it won't pass! It isn't a file. It's a circle!"

"A circle!" Comprehension dawned. "A circle! Then how—how can we get you out? We can't break it or——" He paused. Now the queer parade was leaderless, helpless, but once it were broken at any point, it would turn into a fierce and bloodthirsty thing—and it might attack the girl. "Lord!" he gasped.

Harbord and Cullen were beside him. "Herè!" he snapped. He seized the remaining rope. "I'm going across. Stand close."

He crawled to the shoulders of the two. From that height it might be possible to leap the creatures. It had to be possible.

He made it, though it left Cullen and Harbord groaning from the thrust of his hundred and eighty pounds, Uranus weight. He spent only a moment holding Patricia to him; the menace of those circling monsters was too imminent.

He flung an end of the rope to the two beyond the circle. "Can you swing across if we hold it high enough, Pat?"

The girl seemed on the verge of exhaustion.

"Of course," she murmured.

He helped her lock elbows and knees around the rope. Slowly, painfully, she inched her way in the manner of a South American tree sloth. Ham had one terrible instant of fear as she wavered directly over the file, but she made it, dropping weakly into Harbord's arms beyond.

Then she cried out, "Ham! How can you get across?"

"Vault 'em!" he flashed.

He spent no time in reflection. He gathered all the strength remaining in his body, drew back for a short run, and actually cleared the six-foot barrier of deadliness, his knuckles just touching a black, blubbery back.

Patricia struggled to her feet, clinging to him. He held her a moment, then said huskily, "Lord! If we hadn't found you——"

"But you did!" she whispered. Suddenly she began to laugh hysterically, the sound broken by choking coughs. "Only what kept you? I expected you sooner!" She stared wildly at the circling file. "I short-circuited them!" she cried. "I—short-circuited—their brains!"

She collapsed against him. Without a word he lifted her and followed Harbord and Cullen back along the wire to the *Gæa*. Behind him, revolving endlessly, was the circle of doomed creatures.

URANUS was a banded green globe behind the flare of the afterjets, and Saturn a brilliant blue star to the left of a tiny, very fierce sun. Patricia, her cough already improved in the conditioned air of the *Gæa*, lay passively in a pivot chair and smiled at Ham.

"You see," she said, "after I cast off the rope—Wait! Don't lecture me again about that!—I stepped just the merest few paces into the fog, and then,

after all, the plants I had seen turned out to be the same old zigzag ones I named Cryptogami Urani, so I started back and you were gone."

"Gone! I hadn't moved."

"You were gone," she repeated imperturbably. "I walked a short distance, and then shouted, but the shouts just sort of muffled out. And then I heard a couple of shots in another direction, and started that way—and suddenly the chain gang came plunging out of the fog!"

"What'd you do?"

"What could I do? They were too close for me to draw my gun, so I ran. They're fast, but so am I, and I kept ahead until I began to lose breath. Then I discovered that by sharp dodging I could keep away—they don't turn very quickly—and I managed for a few minutes, although that blinding fog kept me in danger of tripping. And then I had an inspiration!"

"You needed one!" he muttered.

She ignored him. "Do you remember when I mentioned Fabre and his studies of the pine processionary caterpillars? Well, one of his experiments was to lead the procession around the edge of a big garden vase and close the circle! He did away with the leader, and do you know what happened?"

"I can guess."

"You're right. Lacking leadership, the circle just kept revolving for hours, days, I don't know how long, until at last some caterpillar dropped from exhaustion, and a new leader was created by the gap. And suddenly that experiment occurred to me, and I set about duplicating it. I dodged back toward the rear end of my procession, with the front end following me!"

"I see!" muttered Ham.

"Yes. I intended to close the circle and dodge outside, but something went wrong. I caught up with the rear all right, but I was just about worn out, and I stumbled or something, and the

next thing I remember was lying on the ground with the feet of the things pounding by my face. And I was inside the circle!"

"You probably fainted from exhaustion."

"I never faint," said Patricia with dignity.

"You did when I got you out."

"That," she retorted, "was simply a case of going to sleep after about forty hours of staying awake without food. Fainting, or syncope, is quite different, being due to an undersupply of blood to the brain——"

"All right," cut in Ham. "If fainting needs a brain, obviously you couldn't faint. Go on."

"Well," she resumed placidly, "there I was. I could have shot a break in the circle, of course, but that would have brought an attack, and besides, I hadn't the least idea where the *Gæa* was. So I sat there, and I sat a week or ten days or a month——"

"Forty hours."

"And the fog shapes kept rustling over the file of sausage creatures, and they kept flickering and rustling and whispering until I thought I'd go mad. It was terrible—even knowing what they were, it was terrible!"

"Knowing what—— Do you know what they are?"

"I figured out one good guess. In fact, I had a suspicion as soon as I saw Cullen's infra-red photographs."

"Then what the devil are they?"

"Well, you see I had a good chance to examine the chain things at close range, and they're not perfect creatures."

"I'll say they're not!"

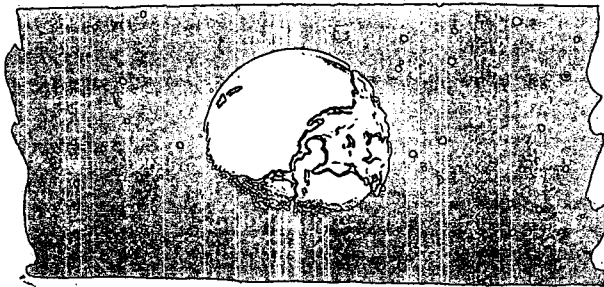
"I mean they're not fully developed. In fact, they're larvæ. And I think the fog shapes are what they grow up to be. That's why the fog shapes led the things to us. Don't you see? The chain creatures are their children. It's like caterpillar and moth!"

"Well, that's possible, of course, but what about the weird faces of the fog shapes, and their ability to change size?"

"They don't change size. See here—the light on that part of Uranus comes from directly overhead, doesn't it? Well, any shadows are thrown straight down, then; that's obvious. So what we saw—all that flickering, shifting crew of gargoyles—were just the shadows of floating things, flying things, projected on the fog. That's why the fog shapes grew and shrank and changed shape; they were just shadows following some winged creature that moved up and down and around. Do you see?"

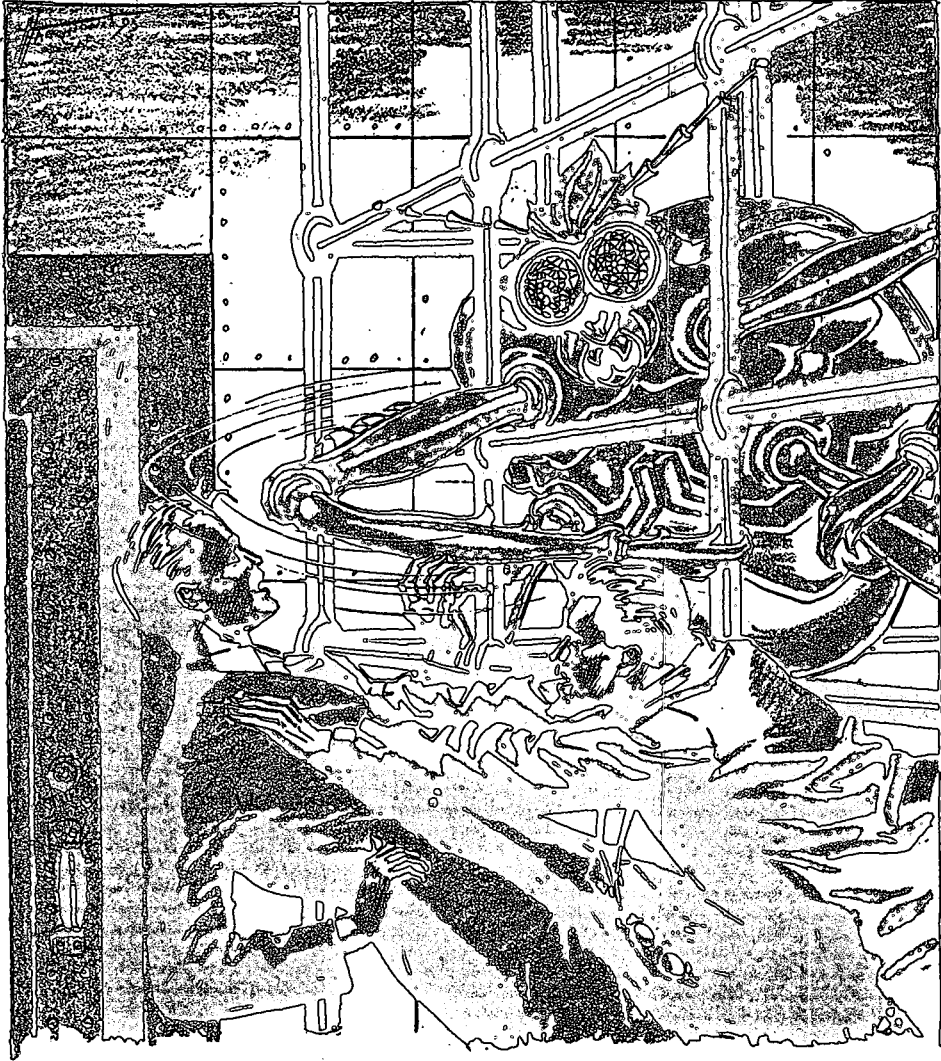
"It sounds plausible. We'll report it that way, and in eighty years, when the north pole part of Uranus gets around to the Sunlight again, somebody can run up and check the theory. Maybe Harbord'll pilot them. Eh, Harbord? Think you'd be willing to visit the place again in eighty years?"

"Not with a woman aboard," grunted the astrogator."



Faceted Eyes!

by E. L.
Ross



THE impact of X-rays upon the genes changes either the genes themselves or the pattern of their arrangement in such a way as to produce these mutations," Dr. Miller explained to me as he led the way, through a maze of fruit fly cultures, electrical apparatus and miscellaneous biological equipment, to his untidy desk. We were in the huge genetics building

shortly completed by Southwestern University, primarily to house and do honor to Miller's work in this field.

"My early studies showed that *Drosophila* could be made to change his characteristics along certain lines," he continued, gesturing to photographs on the walls. "We could change his bristles, his body markings, and so on. All this work was just childish exploration."

(It had won him a place as the ranking geneticist of North America!) "My recent work, which I shall publish next month, will revolutionize our ideas of heredity, of the rôle of genes and the cytoplasm, our prospects even of eugenic control of the human race!"

"Look," he continued, drawing me to a series of vastly enlarged photographs. "What would you say to a fruit fly with only four legs?"

"But," I expostulated, "it has always been thought that the phyletic structural characteristics were controlled through the cytoplasm, not through the genes!"

"Exactly," was the answer. "But I have succeeded in screening my radiations or modifying them in such a way—to be entirely frank, the physics of the thing is still not plain—as to change the obscure molecular or crystalline structure in the cytoplasm and thus overturn the entire concept of cytoplasmic continuity!"

The pictures were things of bizarre appeal. Almost one would have thought they were faked; at least, one familiar with the traditional ideas about the limits of radiation-induced mutations. Here was a fruit fly that clearly had only one eye, an enormous multifaceted gem. Flanking it, another seemed to have overleaped the body segmentation so characteristic of the insects, having a one-piece body and legs jointed only at the hip and knee.

"Here is a real beauty," Miller interrupted my gazing. "I had a permanent exhibit made of it because of its unique mutation."

On the wall, protected by a sealed heavy glass case, was a delicate mounting of one of his specimens, fronted by a magnifying glass so that it was always on display. "Why?" I gasped; "it has the inner structure of a mammal." It was obvious, even to a hasty inspection; that here was an insect possessing organs never associated with its class. The reproductive system was entirely alien

to that with which I was, in my status as an instructor in elementary biology, vaguely familiar. On the other hand, it had no indication of assuming a vertebrate skeletal type.

"This beauty"—Miller, a scientific aesthete, always referred to his best specimens as beauties—"first set me on the track of my most radical experiments. I had found a critical range of frequencies within which cytoplasmic mutations generally occurred. Now, by systematically varying the temperature and length of radiation, I find that there is a set of optimum conditions at which every mutation follows the same general rule!"

He paused, and I took my cue. "Yes," with an attitude of expectation, "what was this general rule?"

"Every mutation at these conditions was a change which could only be described by saying that the insect was trying to become human!"

Naturally, I protested this. I accused Miller of letting his imagination run away with him. I even gently insinuated that he should take a vacation, go up to his cabin on the Guadalupe River headwaters and take a long rest. He fumed and fretted, but finally seemed to make a difficult decision.

"All right," he said, "I'll show you. I've been intending to destroy the thing, but if I keep an eye on you, I don't believe it can harm you, and then you will be a witness that it was actually alive. Otherwise, heaven knows what chicanery I'll be accused of!"

MOVING to the stair door, he began to open it. I was surprised to see that it was fitted with a heavy four-letter combination lock and the door had been reinforced with steel insets, although it was already a heavily paneled oak door. Without explanation, he led me down steel stairs to a basement room without windows. In a corner an iron-barred

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cage contained what seemed to be a well-grown gorilla.

"Why, Newt, I didn't know you went in for keeping—" I began, when he shut me off abruptly.

"Don't look at the eyes! Understand? Don't—look—at—the—eyes!"

But this instruction was my undoing. I scarcely got an impression of the rest of the creature. For my gaze swung involuntarily to the eyes and could not leave them. They were great, glowing hemispheres, many-faceted after the fashion of insect's eyes, but staring with an intense concentration that struck me like a physical blow. In those eyes I saw a giant brain striving for knowledge, and an organism struggling up from the abyss—the ceaseless quest of life for greater and greater complexity, the unending drive toward superiority, the vast, unread history of an evolution deeper and wider than our biologists had ever dreamed of—the pettiness of human knowledge, and the futility of human minds—

I was knocked to the floor by the impact of Miller's charge as something like a heavy brown club whistled through the air at the level my head had occupied. "Thank Heaven I came to my senses in time," he gasped. "If that—that—arm had struck you, you'd been brained!"

I could scarcely comprehend what had happened. Rapt in my concentration on the shining eyes of the beast, I had walked right up to the cage and, but for Miller's timely assault (delayed because he, too, had momentarily fallen under the spell until I walked into his line of vision) would have been brained by the monster within. My stomach squirmed at the thought of my narrow escape. We had, of course, scrambled back out of reach of the deadly swinging flails and carefully avoided looking into those menacing eyes. "Hypnotic mirrors," I exclaimed half-unconsciously. "They work just like the mirror

devices used in some hypnotic experiments Hill has been doing in the psychology lab. But much more effectively—because of the infernal glow they have, I suppose!"

Sobered and convinced by Miller's demonstration of his weird mutation from a harmless fruit fly, I followed him back up the stairs to the main laboratory. Here a hasty conference quickly brought us to a decision to destroy the monstrosity at once. Miller explained that he had had a narrow escape once before—hence his precautions to keep the beast in, and others out—but that he believed the hypnotic effect much stronger than before; practice or mere growth. We might have stopped to debate the old problem of heredity vs. environment, but the situation called for action. I recalled my .45 automatic locked in a cabinet across the quadrangle, and left to obtain it. Neither of us thought that this might be a hopelessly inadequate weapon!

Out of breath from my dash to South Hall and back—I'm not so young any more, I guess—I rushed into the laboratory to come upon a scene of havoc and confusion. A huge X-ray apparatus had been smashed by blows as of a crowbar. Elaborate glass structures, fine wiring grids and connections had been swept as by a huge broom from the tables to the floor, and crushed. The lab was a scene of utter chaos.

The door to the stair was open. A full-length window had been pushed out of its frame.

My heart stopped in panic. I knew what had happened as if I had seen it. Miller must have gone downstairs while I was away! I dared not think further. The thing was loose. That incredible thing which must not live. It was too big to move fast—but—

Trusting that the monster had gone out the window, I dashed down the stairs to find what I knew was there. Newt's body was literally smashed to a

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pulp. By what ruse the beast had gotten his attention, compelled him to open the combination lock on the cage door and thus escaped, I was never to know.

THERE was no time for grief and less for speculation. Somewhere on the university campus a destructive machine of remarkable potentialities was on the loose. It was essential that I do something to stop it, and to warn others. It took minutes—or so it seemed—to get police headquarters on the phone—

"Hello! Sergeant? Warn your men near the university that a dangerous animal is loose. About the size of a gorilla. Tell them to shoot to kill!" I hung up, frantic to go out and exterminate the thing. By my failure to warn the police of its eyes, I was the unwitting murderer of two brave men. I found their bodies as I raced about the campus; each had died without firing a shot.

Remembering its peculiar heredity, I sought in vain for a clue to its instinctive activities which might help me find it. Chance came to my aid. Running into a narrow, dimly lighted passageway between two buildings, I saw the monster's bulk just vanishing at the other end. Reckless, I dashed after, but reason came to my aid and I paused, looking round the corner before turning. The beast had its back to me, as it crouched behind a bank of shrubbery. Taking careful aim at the point which I thought would correspond to its heart—though realizing that this creature might be constructed on unheard of lines—I pressed down the trigger and held it. Then I saw that which brought terror to my soul—the heavy, steel-jacketed slugs, traveling a distance of less than twenty feet, glanced off the hard, chitinous armor as if from a battleship. In utter despair I fled as the huge brute turned and lumbered slowly in my direction. Thank Heaven it had none of the speed of movement of most insects!

Having distanced the thing, I stopped to look about in desperation. To my ears came the welcome siren of a squad car. I ran to the drive where they must enter the campus. There was a machine gun in the car and we decided to try this against the armor-plated enemy.

It failed. By dint of carefully keeping my eyes on the ground and hitting one of the policemen a terrific blow on the cheek when he lapsed into the hypnotized stare and started walking robotlike to death, I saved our forces without loss—but also without victory.

The situation was becoming desperate. We considered hand grenades and high explosives, but left them as a last resort because of the buildings and delicate equipment of the university. Poison gas was discarded as too dangerous and perhaps unsuccessful. We could not take time to experiment on *Drosophila* in search of an effective gas!

Then I had another brilliant idea. "Sergeant Wilton," I called to the head of the police squad, "since the eyes of this thing are its best weapon, can't your men stay at a suitable distance and shoot them out? Keep one man with his eyes averted by each man who is to shoot. Maybe this will work!"

Did the hellish monster hear and understand my words? Or did it add clairvoyance to its devilish hypnotic skill? Try as we would, we could not lure the beast into a position where the group could shoot at it. It had backed up into a kind of L-shaped court from which no escape was possible, but where we could not attack without incredible danger.

We were at an impasse. Starving the brute out might take weeks, for its peculiar metabolism was unpredictable; and even though this was the summer vacation and the campus was relatively deserted, we could not take chances on having the thing escape again and perhaps reach the town.

It was while I desperately reviewed

all my memories of this hectic day, trying to hit upon the weak spot—the Achilles heel, of the monster—that the flash of insight came to me. “Its eyes are like hypnotic mirrors,” I had exclaimed. Hypnosis—the control of one man’s behavior by another. Instantly I had formulated a new plan of attack.

On the telephone I learned that Clark Hill, the country’s greatest expert on hypnosis and suggestion, was in his laboratory. To find him, explain the horrible situation, describe my plan, enlist his cooperation, was the work of minutes. If he had been skeptical, much time might have been lost—but he had seen some of Miller’s lesser marvels of mutation—

I insisted on being the subject, both because I was a first-rate pistol marksman and also because I felt myself to blame for the deaths of two policemen already, and wanted no more blood on my own head. Hill, intrepid scientist, dared to go with me. It was necessary that he should, but I would not ask him. He insisted.

Placing me in a comfortable position—if that is possible on the stone bench we used—Hill proceeded to hypnotize me. The method he used was simple direct suggestion, familiar to all students of the science. The rest of the story I describe as it was related to me afterwards.

“You have often shot at electric light bulbs for fun,” Hill stated to me when I was in the hypnotic trance. He knew this to be true. “Now I am going to show you two glowing bulbs and I want you to shoot them. You will shoot very calmly and carefully. You must not miss! You will remain absolutely under my control at all times. You can have no thoughts, make no movements, except those I permit you to make.

“Your only thought is to be of shooting out those light bulbs. You will think of nothing else, do nothing else.”

Reloading my automatic, we crept

forward until we reached the corner of the L. Hill reemphasized his hypnotic instructions; we rounded the corner. Hill, despite my warnings, could not overcome his scientific curiosity. Specialist in hypnosis, he wanted to see with his own eyes this weird freak of laboratory science collaborating with nature which possessed such supernatural powers.

My gun halfway to a level, it paused. I had been instructed to shoot the light bulbs—but now something was between me and them. I could not see my targets. One of the minor miracles of the day happened just then. Hill, walking the machinelike walk of the monster’s victims, found his progress blocked by a pile of ashes and rubbish which had just been shoveled from a basement window. Still facing the thing, he walked sidewise to avoid the obstruction.

At last I could see my targets. My gun, already in position, spoke rapidly. The bulbs, glowing brightly in the dim light, were extinguished. Hill suddenly reverted to normal consciousness within six feet of one of the most deadly monsters ever to walk the face of the earth—but a monster deprived of its most dangerous weapons. He beat a hasty retreat.

The thing, blinded now, huddled in a corner by the court. Like Samson, it was still too powerful for direct attack. A fifty-pound iron bar, dropped from the four-story building’s roof, penetrated the armor, paralyzed the giant nervous system. A squad of policemen, augmented by ourselves and a couple of frightened janitors, improvised a battering ram and applied the final stroke by breaking the huge neck.

The remains were burned. Every one present was sworn to secrecy, but rumors even more weird than the reality were circulated. But we denied them. It was the only thing to do.

Phantom Star

by J. Harvey Haggard

WE LEFT the 14th Planet of Agena, of the constellation Beta Centauri, ascending above the frigid upheaval which lay exactly as it had reposed for countless centuries, preserved in the intense cold. Our sharp-prowed craft mounted up into space and headed out into the ebon, star-studded firmament, with the great star, Agena, lying ahead but slightly beneath our keel.

There were but two men in the space ship, breathing the air that was being constantly replenished within the circulating aeropumps at the rear, treading the decks whose artificial gravity tugged snugly at our bodies. Each was occupied with diverse thoughts as we watched the velvet star field swing across the transparent glassite prow of the control room to waver uncertainly while we manipulated the propulsion instruments preparatory to establishing the determined trajectory of our flight.

The space ship lurched unsteadily as I locked the repulsion motivators which would swing our craft like a stellar missile along a computed line of unleashed gravitational forces.

I locked the controls abruptly, swung aside from the pilot seat. On the upper slant of the pointed prow, the bulbous, transparent lens before the control room extended out into space, like the single eye of some monstrous fish. Leaving the control board, with its familiar array of mechanisms and dials, I paced a runway hugging the left hull, pressed a spring release in the wall, and watched a tiny aperture slide back, revealing a small compartment, stocked with sealed, pyramidal bottles.

"No use to bother the controls, Gregg! I've locked them on our course," I said.

Terrestrials had wondered at the association of Fran Gregori, whose radical scientific theories were being considered by many of the greatest savants in the universe, with my own obscure person, who had intruded but slightly into the publicized fields of research.

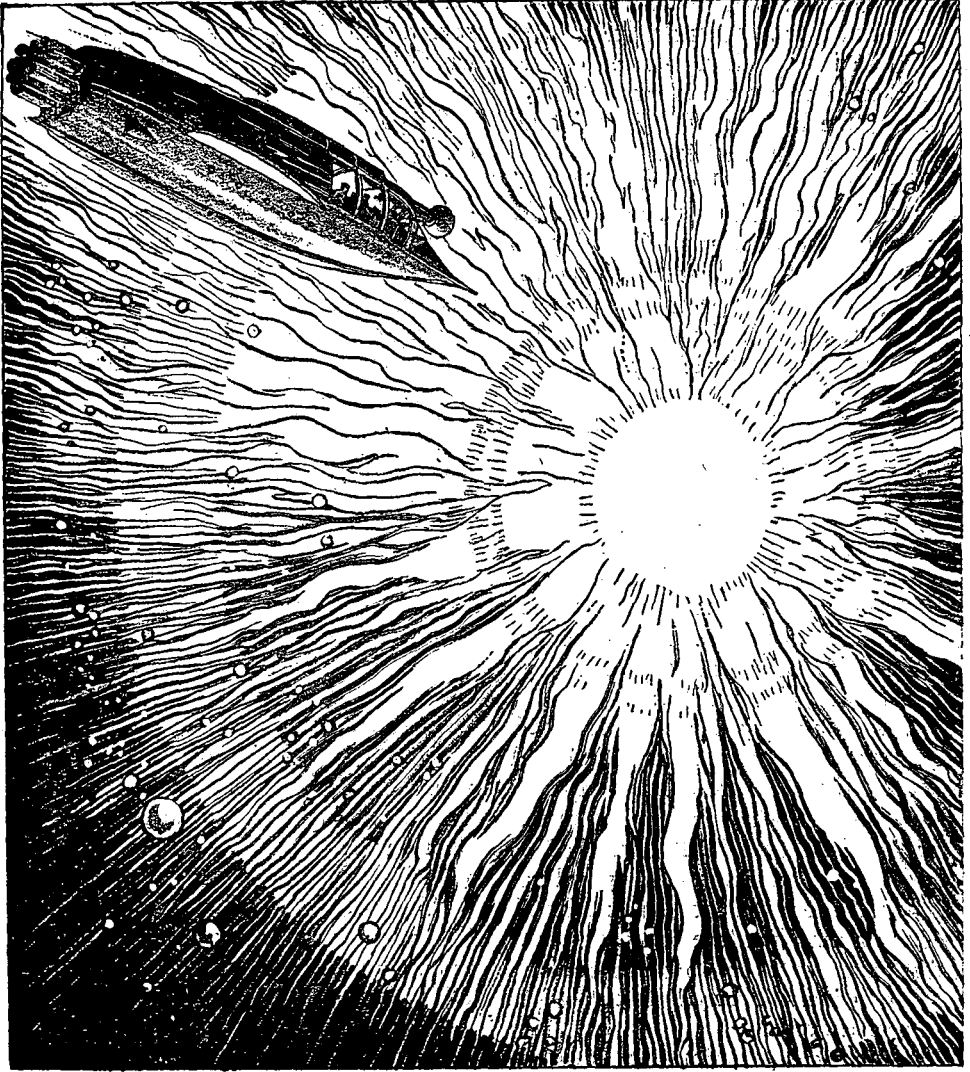
"What more appropriate than an Earthly vintage, as rare and delicious as this, brewed in the green vineyards of our own far-away world! Even here in distant space, we can do homage to the planet that begot us. Come, Gregori, let us celebrate my surmounting the unfathomable depths of ignorance and restraint, with a sip of wine such as is made in but one tiny globe in the entire cosmos."

"Excellent, Marlin! Then you have succeeded?" queried Gregori eagerly, nor could he hide a furtive greed which I pretended not to notice.

His gray blouse was open at the throat and rolled over bulging forearms. "You've succeeded again?"

"I have," I answered solemnly, "even beyond the extent of my cherished dreams. Ah! here in space we learn many of nature's inexorable secrets which are excluded to you students who sit tight to your precious planets! Let us drink to it, we who have known each other so long, and to all those surrounding infinitudes to which we must some day belong. Again I have won out. We shall drink with this wine; it is Amon-tillado!"

He was leaning forward; now he thrust out a blue-veined hand, gaining support from a near-by railing which girdled the interior. His face was oddly chiseled; I despised and loathed each outline. The nose was too large, the chin curiously ridged. For all of his



Then came the crisis. The blazing light of the star became visible as gigantic flames, licking up greedily.

reputed learning there was much I could show him about interplanetary space.

"Amontillado?" he repeated.

"Again I quaff the sweet nectar which is success, yet which may be transformed to the sourest acid," I proclaimed, filling the glasses and handing him one.

"Amontillado?"

"You recall the fable then?"

"Amontillado!"

THE SILENCE of the conning room was shattered by a splintering glass, which fell from a paralyzed hand. The wine splashed across the metallic floor, its color almost imperceptible. Gregori's eyes were wide with astonishment. His pointed upper lip hung out, almost in mid-air. Ordinarily so expressive of selfish abandon, its taut outlines captured some expression akin to horror.

"But Glennin told me, Marlin——"

I cut him short. "Glennin was a fool! He sits in his freighting station on the 14th Planet and passes his time talking," I said. "He believed what I told him. That is why you are here."

"Yes; that is why I came," admitted Gregori, his face almost impassive. It was evident that he was attempting to control the first natural reactions accompanying his astonishment. Yet I knew he was afraid. His hands were trembling. "It was a neat trick, by Heaven!"

"I expected you to be interested. The scientific world has lost its enthusiasm in your consecutive contributions, following the 'Kinetic Neutralization of Macrocosmic Space,' which was the title of our first collaboration—if you can call it that," I announced.

"I tried, foolishly enough, to convince a few individuals, whom I thought would believe, of what transpired. They laughed at me, as was natural."

I was outwardly cool and collected. Never once through those years had I betrayed the deep resentment for all those injuries he had inflicted upon me. Small wonder that he had recalled so readily an old narrative of classic English relative to a "cask of Amontillado," wherein a man had lured an enemy into a dungeon, ostensibly to procure a rare bottle of wine, but secretly to entice him to a sealed death.

The fictitious situation had been duplicated with ludicrous precision here. Years before I had been elated at the sudden success of my pursuits in the study of static electricity and its relation to the pent-up kinetic energy of the universe as a whole, which I had proved as capable of being harnessed to man's needs.

Victory had come with a burst of complete enlightenment. What that discovery represented would have been, to me, the ultimate achievement. During those bitter years of silence I had looked back with bitter retrospective upon that

occasion, long before, when I stood before the threshold of a marvelous door which had never opened. I had trusted Fran Gregori, then.

Gregori seemed dazed. He licked his lips stupidly.

"You intend to kill me, Marlin," he said in shrilly unnatural tones.

"We shall go together."

"Maybe I was wrong, Marlin. You realize, after all, that I am only human. I have never really understood you. You were so much like a machine—cold-blooded, implacable——"

"Look behind you, Gregori."

"Good Lord!"

He had turned. He was a large man; now he stood, half bent, his eyes searching outward. There was an ovoid outline of interstellar space beyond the controls. Now the giant star, Agena, loomed in the center. It was larger than before. It took no second glance for him to realize that our craft was set head-on.

With a tortured wail he leaped upon the controls, wrenching at the mechanisms. He stood dazed for some moments, staring out at the impending doom which rushed upward with the inflating image of the great star.

"Ha ha!" he laughed. "It is a joke. I'll admit you've scared me, Marlin, but we'll have to be getting back. After all, we've both a life to live."

"Mine vanished years ago."

The illumination from the onrushing star caught the gleaming gray across his temples. He seemed to age with each instant. Sweat glistened over his face in great beads. His hands slipped from the useless controls.

"What is it you wish?" he asked in a tremulous voice. Not yet had fear overcome his insufferable pride to the extent that he would cower before me. "We can come to terms. What is it worth to you? I did betray you, but I can repay now."

"Yes," I said. "You can repay now."

He understood the portent of my

words. Slowly his features were metamorphosing into a mask of livid terror. He left the railing and came toward me slowly, half crouched.

When he sprang across the metallic flooring, a wall of impregnable glass had leaped between us, protecting my body within a closed semicircle, though our voices were yet distinctly audible across the barrier. For long minutes he pounded at the glass, bruising his fists until they were mere masses of bleeding pulp. At last instinct for self-preservation prevailed, and he cowered before me, blubbing incoherently for his life.

WHEN he again faced the prow of the space vessel he cringed backward, half supported by the glass obstruction at his back. The star, Agena, occupied most of the visible space above the control board, its illumination glaring lividly to each corner of the conning room, seeking out each bit of intricate apparatus designed to aid in the comprehensive navigation of space. His breath came hoarsely.

"I'll make retribution!" he moaned. "In the name of Heaven, Marlin! I'll make retribution! I will bare the entire circumstances of my guilt. Anything you wish! You may make a record of it."

"A record is being made of every word you say," I returned calmly.

At that, with the intense glare of the nearing Sun full in his eyes, he lost all vestiges of sanity. He waved his arms and screamed aloud. Inevitably his gaze seemed held to the monstrous furnace which leaped to engulf us. Occasionally during those last few moments he turned to plead with me, confessing deeds of which he and I alone were cognizant.

Then came the crisis. The blazing light of the star became visible as gigantic flames, licking upward greedily. They curled up, caught at the exterior of the space craft. I braced myself

solidly, gripping a wall stanchion with terrific pressure. For a single instant a stunning sensation smote through my every nerve. My body, immersed in some hellish sea of fire, swept through illimitable expanses of scintillating light.

The space ship shuddered slightly, as if deviating a trifle from its path, but no concussion came. As suddenly as the brilliance had come, it was gone.

The black field of space lay ahead. Even the tiny myriad stars were not visible, due to sudden visual contrast. Impenetrable darkness reigned until the muscles in our eyes gradually asserted themselves. The giant star was gone.

"There is no cause for further alarm, Gregori," I said, stepping from my protective barrier. "You will not be harmed. I have what I want. The image we have just traversed was no true star. It is what is called a 'ghost star.' Existence of stars such as this was suspected long ago.

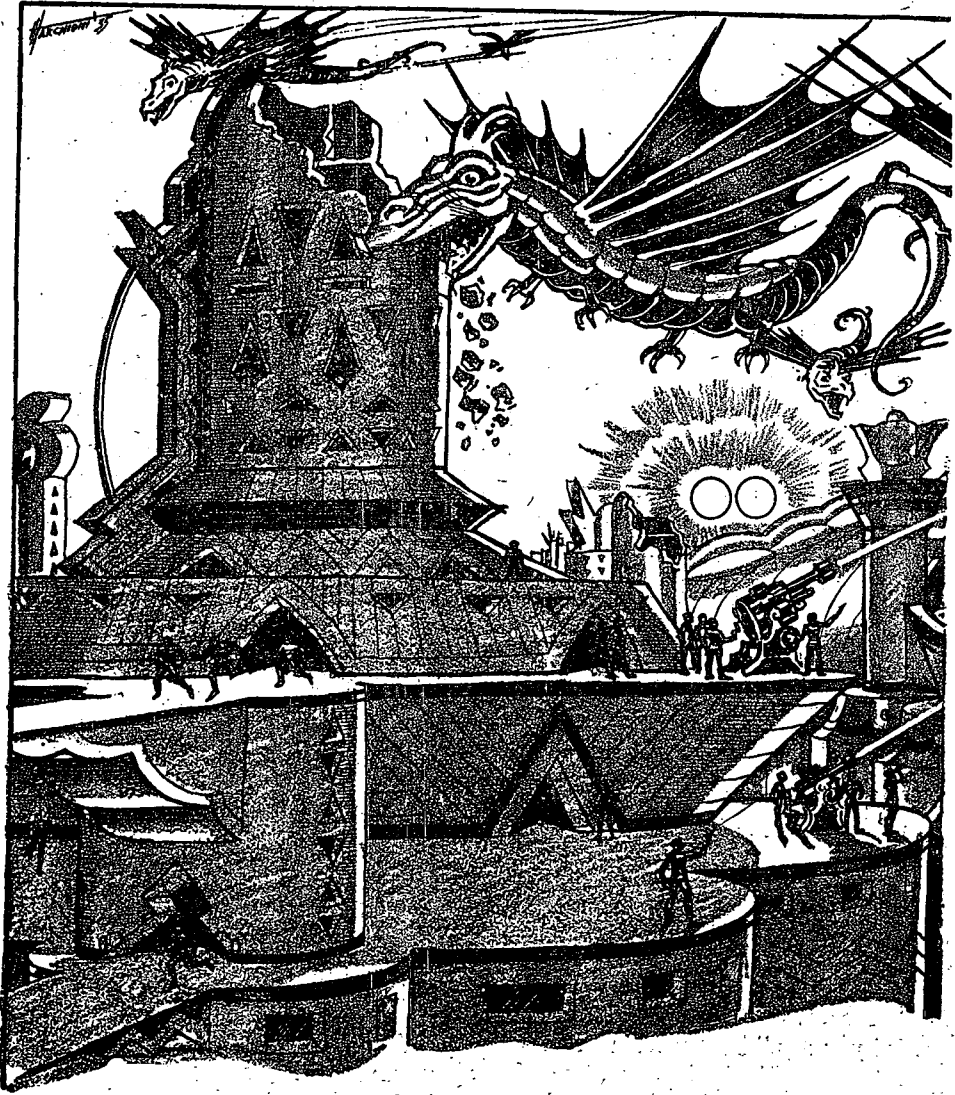
The original star of Agena has burned out, and wandered away into space as a dark star.*

"Agena is a ghost star. It is a phantom reassembly of light rays which departed into Einstein's unbounded space millions of years ago. Our space ship merely intersected the convergence of a light image."

I stepped across his recumbent body toward the recording instruments which had registered the happenings of the past few moments. Again the bottle gurgled, and two more glasses were filled. Tilted before the glassite control window, the sparkling liquid caught roseate tints from the distant stars of space.

"You are not a connoisseur of liquors, Gregori; that is eminently apparent, or you would have known that this wine—is not—Amontillado."

* Eddington estimates the time needed to form a 'ghost star' as approximately 6600 million years.—(Expanding Universe.)



The Way of the

THEY brought in Lee Navarre after the Battle of Tayle in 2637. It was a great victory for Anklo and for Alvaro, the dictatahr. No one knew that better than Alvaro himself.

However, every one knew that even Anklo might have been defeated had it not been for old Noklid, the scientist.

He stayed behind the lines, out of harm's way, and made weapons. He accomplished much; probably, because he considered war but an incident and nothing of importance.

... Had they stopped to think, the people might have called for him to make a speech after Alvaro had finished. But that would have done them no good,



*Above them were the space reptiles
—calmly munching on the buildings!*

Earth

by David R. Daniels

since Noklid was not even at the celebration. He had said that he did not care for speeches; in fact, he had put it stronger than that.

"Bah! People, speeches, foolishness! Give me my laboratory!" And Alvaro said nothing, for Noklid was a person that not even the dictatahr cared to argue with.

Besides, the scientist had Lee Navarre to occupy his attention. No one knew why the scientist wanted him; but as far as that goes, Alvaro was almost the only one who knew that Noklid had him.

That the scientist had asked for Lee caused the dictatahr quite a lot of thought. Had any one besides Noklid asked for him, the request would never

have been granted; it is possible that the asker might not have lived to make another request. However, Noklid was Noklid, and greater in his way than any dictatahr.

"When I promised to help you," he had said, making his teeth click a little on the "you," "I was in turn promised that I might have anything I chose beneath the dictatahrship of Earth. I did my part, now I ask you to do yours. All I want is that since Lee Navarre has been captured alive that he be brought unharmed to my laboratory. Will you do as I ask?"

Alvaro had demurred. "Who knows what you may contemplate—" His voice had trailed off as though what he thought were better left unsaid.

"Do you think that I plan rebellion?" Noklid could be very much to the point when he chose.

"No, no," the dictatahr hastened to explain. "Yet as you know it has been the law of the planet for a hundred years that no living thing be killed other than humanely. Now it may be—"

"Poppycock!" Noklid interrupted rudely. And since it is not the custom that dictatahrs be spoken to thus, Alvaro was so dumfounded that in the end Noklid won out.

Lee was taken to the laboratory uninjured save for a great lump on his head. That lump had been unavoidable, since after the fall of Tayle he had fought on alone, with ray gun and atomic blast, defying the world.

Even after the charges of his gun were gone, Lee continued to defy them all. There was much of the god in his heroic form, and he had that in him which could sway multitudes. In war time men see and do many heroic deeds. All those who had fought Lee that day had envied him. Had he cared, it is possible that he might have called some of them to him.

It was no wonder that so many had died for him. His was a great person-

ality, and also, he was considered the greatest inventor of the age. Not even Noklid could approach him in that. Doubtless the scientist had the greater brain, but he seldom considered such mundane things as the manufacture of arms. Seemingly that was all Lee ever did think of.

But, that weapons were not the only thing he knew how to use he had shown the day he was captured. The guns he had made could not shoot on forever, but it appeared that he would not cease to defy them all. After his weapons were empty he clenched his great fists and called to the ships to come and take him. He stood alone on the tower, his head bare, and laughed at the circling fliers.

"Come on," he had yelled as they dropped, closer. Though each man longed for the honor of capturing him, they loved him.

SINCE it was feared that he might leap to death over the side of the tower, half the fliers dropped a hundred feet, and, hovering in mid-air, stretched a great net which had been brought for just such an emergency. Had it not been for that Lee might have leaped so that the last laugh would be his; no one ever knew what the man contemplated.

He had glanced down and seen the net and laughed again, anyway. "Come on," he repeated. "Don't be afraid." He knew there was no escape now, for already a ground force was coming up the inside of the tower. Very likely he gloried in the fact that it needed an army to take him. He had backed against a balustrade where he stood squarely on his two feet.

They came, weaponless as he was, for they knew better than to harm him. They could only approach him from one direction because of his position, and it was no easy capture since he towered a head above them all. The first he felled

with a blow to the jaw, and they approached more warily. Finally they had rushed, hurling themselves upon him so quickly that his driving fists were clogged, till they bore him down by sheer weight. Yet he had fought on and on, like a cornered animal.

At last, driven to desperation, some one hit him on the head with a piece of metal his groping fingers encountered. After that they bound him with chains and bore him back to Anklo, since he was unconscious and had nothing to say as to what they did with him.

Now Lee stood in the laboratory, alone except for old Noklid. He was still chained, since otherwise no one could have done anything with him had he chosen to resist. His clothes were in tatters, but his air did not suggest the captured leader of rebellion.

He was smiling as he had while he fought. While his features were good, he was not handsome, though he was magnificent. And it was noticeable that humor lurked always in his intelligent eyes or on his countenance. He acted as though he considered mankind a curiosity, and a very funny one.

Noklid peered at him through his spectacles. They were large and round and gave him an owl-like expression.

"Quite a specimen," he murmured, "intelligent too, if one is to judge by the shape of the head."

The smile of the prisoner widened. "Am I a rat to be used in the interest of science?" he asked. "I can think of other and more polite things."

"Tut, tut," Noklid said. "From the things I've heard said to me I have almost reached the conclusion that I am poorly thought of." Then he decided to explain:

"Over in that corner, young man, is some of my apparatus. By your leave I will experiment with it on you. Otherwise—however, after you hear me I think you will be willing."

Lee's gaze followed Noklid's pointing

forefinger. "Then, I am a rat," he said. "That looks like some new type of atomic blast with its bell projection. But I may be mistaken; it hardly seems that you would go to all this trouble merely to kill me."

"Of course not. In fact, Lee Navarre—I believe that is your name—I am surprised that I went to all this trouble for any purpose. I spent much good time to obtain you for a subject, all merely to satisfy a whim.

"That apparatus is what I call a mind director, which is only another way of saying that it is for the purpose of sending a man's mind free of his body. But that is not my only object—I had thought to send your mind down into the earth."

Surprise wrinkled deep in Lee's brows. "Send my mind into the earth—for what reason?"

"For the sake of knowledge," Noklid snapped. "Do you think I would do it for pleasure? What do you suppose the earth is like?"

"Why, it is a planet, a ball of mineral matter," was the reply. "It is covered with a hard outer crust beneath which are molten rock and metal subjected to great pressure."

Noklid nodded. "I see you have not forgotten all your knowledge in your silly rebellion. You give the usual belief; but I have another theory. Have you ever thought how great that pressure might be, or what one might find if he penetrated deeply enough into it?"

"Lee, will you go for me to find out what is there? If my supposition is correct, I cannot say what may happen to you; it is probably beyond human conception.

"If you make the journey, and return safely to your body, I will see that you are pardoned. If I cannot accomplish that for you, I promise that I will find a means for your escape either from death or from imprisonment. You may cause

a new rebellion every week if you care to."

Lee Navarre looked really happy. "I accept gladly under the circumstances," he said. "Now please remove these bonds. I give my parole into your hands, and my honor has always been regarded as something."

Unhesitatingly Noklid took a tiny key from his pocket and unlocked the chains.

II.

LEE'S nearly nude form lay upon a dais. His body was clearly visible through the interlacing apparatus. He was lying so composed that he appeared to be asleep, but now and again certain of his muscles quivered spasmodically, and he breathed quickly. One would have supposed that he was dreaming.

Noklid was very busy. The mind of his subject was now ready to leave its body, and he must watch closely lest it drift away out of control. There was a dial before him by which he could see what Lee saw, but he was unable to communicate with his subject. He worked at his buttons and switches almost as energetically as he would have were he playing some difficult piece on a three bank organ.

When Lee composed himself he sank quickly into what was half unconsciousness and half a state of apathy. He felt his mind, though it seemed to belong to some one else, trying to tear itself free from something that was holding it back. He struggled, mentally, and some of his energy was conducted to his muscles which quivered in sympathy. He had forgotten that he had a body.

Then at last, as though with a sigh, he tore free. At once most of his realization came back to him.

He seemed to be hovering, invisible even to himself, near the ceiling of the room. Beneath him Noklid labored over his prone body. He felt free and light as the wind, as though he could drift

anywhere at will. And then the scientist made an adjustment.

At once it seemed that something compelled Lee to move. It forced him down, and down, and down. He fought against it, for he did not want to go. Finally he remembered the scientist's object and let himself go.

Earth dank and dark enfolded him. He could see; at least he was conscious of his surroundings; and being in the depths of the earth did not hinder that vision. He watched the different strata shooting by. He was surprised that the dirt did not stop his movement. It was as though he were microscopic in size, or even smaller, and that he slipped between the dirt and rock particles.

He left the ground quickly behind, since almost immediately it gave place to stone. For what seemed a long time he watched the veined rock hurrying by. He felt nothing besides a sensation of movement, of acceleration. Neither hunger nor thirst nor heat nor cold bothered him; it was only his will that traveled.

In a moment he was going so swiftly that he could see but little of the hurrying earth. It seemed to go by like the wind, growing continually more solid, its heat rising one degree for each fifty feet he went deeper. After fifty miles it rose much more swiftly, though how he knew he could not have said. The knowledge seemed borne in by some new and as yet undefinable sense. It was not a physical sensation in the least.

After a while he noticed that the rock about him was growing slightly luminous. He imagined that it was unthinkably dense. He thought that he had gone several hundred miles by then.

At about a thousand miles beneath the surface he realized that the rock was now liquid. It was thick and unutterably heavy, yet it was liquid nevertheless. It flowed and changed as he shot through it, for it was now shifting with the Earth's rotation.

Now Lee felt that a change was taking place around him. It seemed that the pressure, which mounted momentarily, was having an effect on the depths of the planet. At fifteen hundred miles he knew it to be a certainty. It had reached an enormous measurement by now; it piled in around him in what amounted to millions of tons, though having no physical body even that did not affect Lee.

The molten rock about him seethed and boiled in titanic disturbance, and that pressure was crushing the atoms of the substances so that the atoms could hardly move. And, since they were heated to high temperature, they tried to move all the harder, so that it was only with difficulty that space could hold them.

Space! That was it! From the time Noklid had first mentioned the experiment, Lee had felt that he should know what the scientist was hinting at, but it had all come about so quickly that he had not remembered. It had been along a line of thought which had never entered his mind of itself, since his interest lay in arms; but, having once heard it, he now recalled it.

He had heard something of the sort at Tayle before the rebellion. In fact, it was before a thought of rebellion had even entered Lee's head. He had been a young student then.

The very room where he had been working came back to his mind's eye, and vaguely he remembered the very phase of the atomic blast which he had been studying. He had had an idea that he might change it into a very powerful weapon. Incidentally, he succeeded, but that has no place here.

TWO bearded professors had been arguing near him. They had been discussing the effect of gravity on space. Lee was a little hazy about that. One of them had made a startling announcement. At first Lee had been so wrapped

in concentration that he had hardly been aware of their presence; but, as time passed and his object eluded him, some word or gesture had caught and held his attention.

"Preposterous!" one of the two had exclaimed. "Utterly impossible. Why, if your theory is correct then each star and planet in the universe might hold the entire cosmos inside itself."

"Hardly," the other had answered. "Remember, I did not say within it, I said that the great pressure of a planet's interior might so warp space that——"

"That the movement of the atoms would cause a bursting of space through some higher dimension. I see your theory slightly now; go back over it briefly."

"Very well, then. Almost word for word, what I said was: It is possible that the mounting pressure within the Earth, causing an excessive weight of the confined molten material, would be such that the movement of the molecules, due to the heat, might cause a bursting of space. Since it is seldom that a planet is blown to bits, that bursting would necessarily be through a higher dimension."

"Thus, an imaginary *voyageur*, who found it possible to withstand this pressure and heat, at a certain point beneath the earth's surface would be carried through that dimension with the bursting. It would suddenly seem to him that he had been transposed to some remote part of the universe, or perhaps into an alien cosmos altogether. Do you see my point now?"

Lee did not remember what the other had said, for at that moment he drifted again into the depths of his problem. Until this moment he had not thought of the argument. However, it had stayed in some little-used portion of his brain.

It seemed dimly to him that the two had started into a long-drawn calculation as to what point that change would prob-

ably take place, but if so, the memory of it would not return. His mind had been too full of calculations of his own.

Now he was sure that the professor had been right, and that, before his mind penetrated much farther, his surroundings would suddenly seem to open outward. He could feel a slow movement as though the confined molecules around him were stretching periodically into less confined regions; as though they were forcing into some incomprehensible direction.

Queer, he thought, that this change had so seldom been contemplated by men. For seven centuries they had been attempting to find some route to the stars, when all the time distances more remote than Andromeda were, paradoxically, a few thousand miles beneath their feet.

Yet, he remembered, the knowledge would not have done them one iota of good, since one route was as difficult as another. The way of the Earth—of all those in history he was the first, and perhaps the last, to traverse it!

That made him wonder what might happen to him. Could Noklid's machine control his wanderings after he had penetrated past that point? The thought startled him for a moment. If the machine had no effect upon him, might he not find himself lost forever out among the stars? He was not even sure that he could ever die, nor even that he was capable of movement of his own accord.

Even as he felt that twinge of fear Lee knew that the atoms were bulging out in a new direction. For an instant it seemed that space, warped to pin-point size, exploded outward about him. His mind, following the line of least resistance, followed with that explosion!

After that it was as though he had become monstrous, unthinkably enormous. His mind seemed to fill the cosmos throughout all length, breadth, thickness, and time!

Now the whole of space was visible to him. Galaxies with their suns and planets formed a network of long lines. He saw them as they had existed and were to exist through all time. At that moment it did not seem strange that he should see it thus; for all his thoughts were vast as his will which permeated the whole four-dimensional cosmos.

He saw Earth as it had existed in pre-glacial ages before the coming of men; he saw Noklid in his laboratory bending over his own dead corpse; and he saw the planet grown cold with ages and falling into a dim, red sun.

The whole universe was visible in this manner, and it did not seem strange. Afterward, since the sensation had been so vast, he found that he could remember but little of it.

Nevertheless, something on another planet in a remote galaxy caught and held his attention. It was a planet much like Earth, though it revolved around a double sun. And its inhabitants were men!

As nearly as he could say later, that planet was the only one throughout all space-time where conditions of environment were such that creatures altogether identical to the human race of Earth had evolved. But the duplication was perfect, and for that reason it drew his interest.

In one of the three cities of the planet, during an era when its civilization was very similar to that of Earth during the second millenium, Lee saw a man working on apparatus beneath which an unconscious body was lying. He knew that here an experiment was taking place which was very similar to the one he had undergone. He realized that the subject's mind was somewhere out in free space searching for knowledge to enable him to perform a certain task.

Lee inspected the preceding happenings of the planet to find out what that task was. He watched the scientist. He looked at the inhabitants of the planet;

and it is possible that he was able to read the minds of those he watched.

Then, as though he had merely been waiting to do this, the colossal grasp faded from him. As everything had exploded outward it now closed in. He felt himself borne from the height he had reached as though by the closing of a grasp. The chaotic fury of the change overwhelmed him, hurled him over and over, and buried his mind in oblivion!

III.

HATZHO of Elbon-on-Radrok was discouraged. His people could not hold their civilization much longer in the face of the encroaching *Nark-nur* unless something was done; and Hatzho had done his best.

It had all begun ten years before with the first sight of the *Nark-nur*, which, translated, means space reptile. No one knew just where they came from, though, by a calculation over a period of years of the point in its orbit where Radrok came upon them, it was finally decided that they lived in free space. By those calculations the things could not be affected by gravitation, since the place where Radrok met them never varied.

It was finally decided that they followed the two suns, soaking in energy from them and waiting for Radrok's orbital movement to bring it around to them. Then they calmly floated down for their meals. As to where they had been before their first visit to Radrok, no one knew.

They were metallic-looking creatures ten times the length of a tall man and thick in proportion. They were shaped much like the flying reptiles which lived in the forests around the three cities of Radrok, from which they got their names. Yet what they were composed of, or how they navigated space, were questions which the Radrokians could not answer. Some claimed they were

nonthinking creatures borne hither and thither by the very force of light itself. Others claimed that they were highly reasoning, and realized that a few days of each year was as long as the planet could stand their sallies. Hatzho said that neither theory was correct, taking his stand on an intermediate one, but no one knew who was right.

To the majority of the Radrokians it would have made little difference what they were composed of, how they came and went, or, in fact, whether they could move at all, had they not shown so great an appetite for the buildings of men. Of course, the scientists would have been interested in them—they were interested in everything new, but they were the only ones who cared.

However, the creatures had shown that appetite, and they ate enormously. Further than that they came in myriad numbers, larger and larger each year, so speculation on the subject assumed heroic proportions.

Ten years before it had been a very great surprise to the Radrokians to be waked one morning to find that their buildings were being eaten away over their heads. They had come rushing out in all states of disapparel to flee.

Above them, hovering as easily in mid-air as though they were on solid ground, were the space reptiles—calmly munching away on the buildings. It appeared that they enjoyed solid food of a mineral type. The stone and metal structures of Radrok just suited them, and they ate to their hearts' content.

Since all men, whether they hail from Radrok or from Earth, are inclined to be egotistical, it struck the populace as strange that the reptiles showed no appetite for them. It would have paralyzed them with fear, have sent them scurrying away in millions, if the monsters had been tearing down the buildings to get at them, but it would not have surprised them half as much.

As it was, they left their three cities

in a very orderly manner, and with almost no loss of life, but they were both chagrined and furious.

Yet matters were bad enough as they stood. Each of the reptiles held an enormous amount, since they seemed entirely hollow. And they were a prolific race. Their first sally, while causing few casualties, made homeless fully half the population of each of the three cities.

Out in the open country, where the tillers of the soil lived, nothing happened, for the reptiles paid no attention to their rambling buildings. This news threatened to overthrow the balance of population, since it was causing many families to migrate from the cities. Beside finding some way to destroy the invaders, the Radrokian heads must also stop the migration.

That they accomplished, but the other seemed beyond them. There seemed no way of driving off the space reptiles. Great guns were commandeered, but their shells tore entirely through the monsters, seeming not to disable them in the least. They went on eating, broken bits of stone and metal dribbling out through the holes in their anatomies. Seemingly the things had no sense of feeling.

And even when the humans did their worst, they still paid no attention to them. As Hatzho said, "These peculiar creatures seem entirely oblivious to the existence of the *genus homo*. It appears that they look upon our planet only as a feeding ground."

Naturally he did not speak in English, but that is the gist of what he said.

After the first army of space reptiles had sailed away into the sky, the Radrokians gave great sighs of relief and set about rebuilding their cities. That the majority of them had not been killed by falling stone they could attribute partly to the fact that the facilities for leaving the cities were so good; but it was mostly due to the fact that the monsters were so voracious that they

continued to eat the buildings even while they broke. However, the Radrokians gave them no thanks for that.

Almost exactly a year later the things returned to set about their eating as calmly as before. Where previously the people had fled in awe, they now stood in fury. Some house owners even tried to drive the creatures away that they might save their property, and as a result a number of the population were killed. And the space reptiles stayed longer this year.

The reason for that had been the advance in weapons. All year inventors had been working day and night to have machines available with which they might blow the monsters off the face of the planet; but it was all to no avail. The only result was in reverse, since even after a reptile was full of holes it continued to stuff its interior which naturally could not be filled.

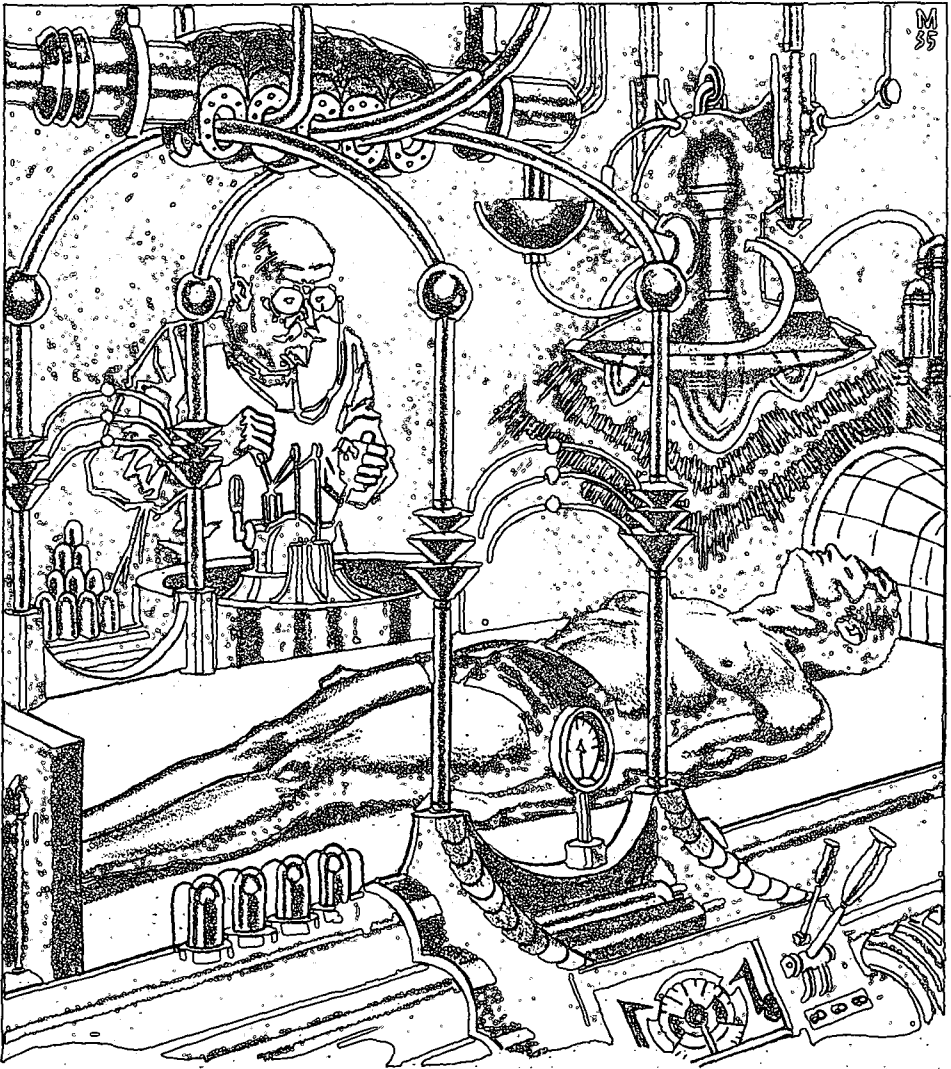
Only when the things were blown to bits did they cease their gorging. And they were so many, and they could move with such rapidity that blowing them all to bits was entirely out of the question. And each year their numbers increased no matter how many were killed.

Had the Radrokians cared to, they might have stopped building their houses above the surface of the ground. Being only human the thought never seriously entered their heads. Amidst imprecations on the appetites of the wreckers they continued rebuilding their cities, only to have them destroyed each year. As to what they might do for revenge they had no idea.

Their civilization was at stake.

LIKE his fellow citizens, Hatzho was concerned in the matter. Apart from them he saw the uselessness of fighting the things with what weapons they had. On the other hand he had ideas of his own, and he set about working on these ideas.

Since he felt that he could do better



Noklid was very busy. The mind of his subject was now ready to leave its body and he must watch closely—

if he had the planet's resources behind him, he obtained an appointment with Warlahk, the ruler. He was closeted but a short time in the rich reception room with its ornate adornments.

"Certainly," Hatzho said, "we can get nowhere by the means we use."

"Very evident," was the reply. "What do you suggest?"

Hatzho contemplated for a few moments before he spoke. "We could

easily kill all the things by means of intra-atomic energy."

He got no further, for just then Warlahk guffawed impolitely. He was tired, and he was never too careful at the best of times. "Doubtless," he said. "In that way we could kill the things in almost no time. On the other hand our scientists have been trying to liberate that energy for something over a hundred years, and as yet they have not suc-

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ceeded. So just what are you going to do about that?"

Hatzho arose unceremoniously. "I told you what I thought," he said very stiffly. "Now I will take my leave." He did not add that had the ruler spoken more pleasantly Hatzho would have laid out his plans. Nor did he add that were he successful in what he contemplated, Warlahk might do well to look to his throne. As he told Na-ani later, he had always thought it was a poor man who ruled Radrok.

Na-ani was the scientist's daughter and was as interested in her father's profession as her father himself. Being a dutiful child, she listened politely to whatever he said. Very often she was able to offer good advice.

With him she set to work on his idea.

"It sounds preposterous, I know," he said. "On the other hand I believe it the most feasible way. We realize how much power there is in the atom, but so far we've found no way of releasing it. Yet somewhere in the universe, probably on many of the numberless planets, there are beings who have found how. With my machine I shall be able to learn their secret."

"Perhaps so," Na-ani answered. She had been raised to look upon the most impossible things as often being the easiest. "It is only your means of finding out which seems so strange. If you were attempting to build a flier to sail out to sea, it would not seem so queer, but the idea of divorcing a person's mind from his body and sending it out to spy on the inhabitants of other planets is beyond me. I even dream about it. It's wonderful, too. Daddy, why not send me?"

The scientist smiled in spite of himself, though he shook his head. "No, no, my dear," he told her. "Your life is much too precious to risk on anything of the sort." Which showed that, in spite of his profession, Hatzho was entirely human. "Besides," he added, "I

need you here to help me. It has already been decided that Aranar will be our subject, since his mind is sufficiently well trained to understand the most intricate of machinery."

"I still think I would like to go," Na-ani said before she changed the subject. "You say that the process will send one's mind almost as quickly as thought—hundreds and hundreds the times of light." She sighed. There are few things so engrossing as a contemplation of unutterable distance.

A few days later everything was ready, and before many more hours had passed Aranar's body lay as though asleep on a dais. Above him was apparatus almost identical to that of Noklid of Earth. The experiment had begun.

Na-ani was very interested, though she did not appear to be. Aranar with his godlike body and his handsome face had claimed the girl's attention when she first saw him, though the young man had been so engrossed in his study that he never noticed her.

At first that had quickened her interest, but as time went by and the man still never seemed to see her, she had almost forgotten him. Now that he was in the midst of an adventure which she would have liked to have taken, she thought very much about him, though she would never have admitted it. At least, that is supposedly the way she reasoned. In the case of a woman one can never be sure.

Then, right in the middle of the experiment, the subject died. His heart stopped beating entirely, and every indication showed that life was extinct.

For a long hour, Hatzho and Na-ani worked over him. They used every means known to Radrokian science to bring him back to life, but it all seemed of no avail. Finally, when they were ready to give up all hope, Aranar suddenly began to breathe again. Hatzho turned back to his controls.

"Can you bring him back now, daddy?" Na-ani asked.

"I believe so," was the reply. "But don't ask questions of me now, dear. I'll be very busy for a while yet, and I want to be left completely alone. You can stay in the room if you want to, since I think you can find plenty of work."

IV.

HATZHO did not know it, nor did Na-ani, nor Aranar, the subject, but the three of them were due for a change in their plans, as was Noklid of Earth. Lee Navarre knew it just before unconsciousness overtook him, but he had seen Na-ani and did not care.

It all came about with Lee's breaking through space. Hatzho had not sent the mind of his subject into the void at the same time as Noklid sent Lee into the earth, but the two happenings took place together in absolute time. That is just another way of saying that time played no part in the incident; for when Lee broke through space he was above all time. Hatzho of Radrok may have lived a billion years before or a billion years after Lee was born, but the two of them existed together in the same scheme of things, and that was all that was necessary.

And so it happened that the two wills, Lee's and the Radrokian, Aranar's, were switched; perhaps because Lee in his absoluteness had willed that things should come to pass as they subsequently did.

No matter how it happened—this is what took place: Hatzho's machine suddenly linked its meshes into the mind of Lee Navarre, while Noklid's, on Earth, losing control of its subject, reached out around space time and became entangled in the mind of Aranar.

The change was practically perfect. For an hour both subjects were apparently dead since for that period they

seemed linked to no mind or will whatsoever. Then each revived, and Lee found that his ego now inhabited the body of the Radrokian while Aranar awoke to find himself in the body of Lee Navarre.

Here the story has done with Earth. It might be well to say that both Aranar and Noklid, impersonal scientists, were elated with what transpired. And since his subject was now no longer Lee Navarre, honest old Noklid obtained his pardon, and the Radrokian prospered and came to high esteem on Earth. But all that is purely incidental.

Lee was also elated when he found himself in the new body in Hatzho's laboratory. His interest was mostly in the girl, Na-ani, whom he found was looking directly at him when he opened his eyes. For it must be admitted that Lee, who had gone through thirty Earth years unassailed, had already lost his heart completely to this girl of an alien world.

"Aranar was a fool," he said with much conviction.

Hatzho thought his words were only the awakening mumble of one who had miraculously escaped death, and said nothing. Na-ani read something in the frank eyes of the young man and blushed deeply. She was very lovely.

"Did you find what we sent you for, Aranar?" Hatzho asked almost at once, rubbing his hands together.

For the moment Lee was at a loss to understand him. However, occupying Aranar's brain as he did, all that individual's gathered knowledge was at his finger tips, though it did not change Lee in the least. He began using that at once, and in a moment part of him seemed that he had been Radrokian all his life.

He understood when Hatzho repeated the question.

"Yes," he said. "At least I know that which you sent Aranar out to discover. But before I speak of it let me make a

little confession. You see, I, the will inside this body, am not Aranar at all. I'm from a different planet entirely."

"So that's how it stands," Hatzho mused when Lee had made a thorough explanation. "Well and good. I wonder what Warlahk would think if he knew about this."

Though Warlahk knew nothing just then it was not long before he learned something on the subject.

Hatzho's actions when they parted had done much to arouse his suspicions, and he was not above having the scientist spied upon. He knew that while as a whole his subjects were not averse to his rule many of them were wanting a change.

He had been realizing that slowly since the first coming of the space reptiles. He felt, and probably was right, that the main reason for the growing dissatisfaction of the populace was that they wanted some one to blame for their troubles. Since he was so much in the public eye he made a very good scapegoat. It would have taken a very strong man to avert such blame, and Warlahk was not strong. Radrokian history had seen many better rulers.

As all the gods knew, if there was any way he could stop the ravages of the reptiles he would certainly do so. They were getting on his nerves as much as they were on any one's—more so, probably. Confound their building eating, anyway!

For perhaps the thousandth time he wondered why he had not listened to Hatzho. If he had, he might have learned something. Now the scientist disliked him, furthermore he could see that the people were very nearly ready for revolt.

Warlahk knew the scientist well enough to realize that he was perfectly capable of leading such revolt. It was after he had thought these matters over thoroughly that he decided to have the scientist watched.

What he heard did not cause him to regret his action. It was now becoming common rumor that Hatzho had schemes against the ruling faction of the planet. On the other hand there was absolutely no evidence in that direction, so Warlahk could only scheme and listen. As he told one of his councilors, "It is too bad that we cannot take the law into our own hands as my great grandfather would have done."

The councilor nodded sagely.

Warlahk's spies brought him other knowledge also, but before long they were public rumor, too. He was perfectly willing to admit that if Hatzho were planning to overthrow him, he was going about it in perfect style.

HE HEARD that Hatzho had built a machine which had entirely changed the will of a young Radrokian in his employ. If he could trust his spies, the Radrokian, whose name had been Aranar, now had the mind of a denizen from another and older planet, and was one who knew much of the forces of light and energy.

Even now he was building certain machines which would destroy the space reptiles by the power of the disintegrated atom. And after that was accomplished, it was whispered, he who had been Aranar but who was now called Lih of Navahrr, would turn his machines against the great palace in Elbon-on-Radrok.

Knowing something of the methods of spies, Warlahk took all this information with several grains of that substance which makes sea water salty. Nevertheless, the news bothered him considerably, especially on such nights as sleep was a hard mistress to woo. As a result he sent other spies. Their stories tallied so closely with what he had heard before that he called in his most trusted lieutenant.

"What is your opinion on the subject?" he asked, when he had repeated

the tale after his own fashion. He had learned, as had previous rulers both upon Earth and on Radrok, that flattery is a very good crowbar when it is applied properly.

The lieutenant stroked his chin. "I believe that it would be best to let the scientist work on in peace," he said finally. "If he does have a weapon which will kill the reptiles, then let him use it. After he has finished we can attend to him and his ideas of rebellion. We know for sure that he has almost no followers at present."

"Very well," the ruler replied; "but we had best not wait too long. It is said that his machine acts upon the principle of atomic energy. If that is true we have nothing that would stand against it."

The lieutenant smiled carefully. "As your majesty knows, one cannot believe every story he hears. It is doubtful that Hatzho can destroy the space reptiles; certainly he cannot overthrow you.

"Yet if it is true that he does plan to rebel, he knows that his best and only chance will be when he has slain the space reptiles, and not until then. Before long he will announce what he plans to do, so that no one else can claim the glory for the act. Also he will announce where he will do the thing, and at what time.

"When the day comes my men and I will be waiting. If Hatzho is not successful, he need worry us no longer; if he is, then I will act." The rest of his speech was wholly of a technical nature.

The lieutenant had argued quite rationally. Almost exactly a month later, by Radrokian measurement, and about fifteen days before the space reptiles were expected, Hatzho announced that this year he would put an end to them.

His announcement caused much speculation. A similar speech by a lesser personage would have caused only deri-

sion, but it was well known that the things Hatzho prophesied usually took place. So since he also announced from where and in what manner he would destroy the monsters, most people decided to be there.

On hearing of this Warlahk beamed upon his lieutenant. "It is all happening as you said it would. I am very much in debt to your genius. But Hatzho claims that he will slay the things over each of the three cities simultaneously."

"Quite true," the lieutenant answered. That night he would dream of the day he would be one of the greatest men in the empire. "But he also says that the three machines with which he slays the monsters will be useless after the act is completed.

"I imagine that will be true in the case of two of the weapons, since probably he trusts no one but himself. That will make our work easy since we will have only Hatzho to contend with. I understand that he will superintend the slaying of the reptiles over Elbon. When he has finished we will surround him and lead him away."

"And the people?"

"The people will know nothing about it, your majesty. We will not be in uniform, and we will do the thing so quickly that the spectators will not realize what has happened until it is all over."

"But what of the man who made the machine? Lih, they call him, or some such name."

The lieutenant paused. "In all likelihood, he will be there too. If not, we needn't worry about him either; he would be nothing if it were not for Hatzho. If he is really from another planet he will find it hard enough to live after the scientist is gone."

Even while they spoke Lee was helping Hatzho. He realized that he was an object for popular discussion, and he had ideas for turning that to his advantage, though he did not know that the ruler of the planet was in the habit

of speaking of him. Even if he had, he would probably not have cared; he was working too hard those days for it to matter much what any one said.

Hatzho also was very busy. He waited until the last possible moment to set up his atomic machines, since he was afraid that their secret might be learned.

It was only three days before the expected coming of the reptiles that he loaded two of the weapons into powerful little fliers and carried them off to Thadrad and Raldac, the other two cities. He inspected them carefully to see that they were set up properly, and he left them heavily guarded.

Lee had built a very small machine for himself. No one knew what its purpose was, since to any questions about it he replied with very evasive answers.

Night on Radrok, in spite of the two suns, was very much like it had been on Earth. The central orbs revolved around each other so swiftly and were so near together and the planet was at such distance from them that day was only a little longer than the period of darkness.

Of course, there were certain times during the year when the suns shone from such oblique angles that the light was almost continuous, but that was only for a short time, and nowhere near the season when the reptiles were expected.

On the evening before the Annihilation, as the day was known all over the planet, Lee had a long talk with Na-ani. What he said was his own affair, and it is sufficient to state that the girl looked at him in wonder, giving place slowly to indecision. Finally she nodded her head in agreement.

"All right," she told him, "I'm with you. I have sufficient faith in you to trust you implicitly. I think that what you suggest is much the best for every one. Thank you for telling me."

And Lee drew her to him tenderly and kissed her, and when she left him

her countenance was so radiant as to seem that it had been transformed into something heavenly.

V.

HATZHO felt that he could trust his men, so he had taught two of them how to operate the atomic machines. One of these he sent to destroy the monsters over Thadrad, the second was to officiate at Raldac, while he himself had decided to kill those at Elbon, the capital city.

The space reptiles had been so catalogued and studied that it was known one year just how many could be expected the next, so Hatzho had fixed the machines of his confederates to burn out after the monsters were destroyed. He had no wish for his main weapon to fall into the hands of those who would presently be his enemies. But, as Hatzho did not advertise, his own machine was not so constructed.

However, Warlahk knew that the scientist was an old fox, that while he was in the habit of telling the truth he was not above weaving a fabrication. Therefore he saw to it that soldiers would be waiting to surround each of the three machines, though the greater force would wait at Elbon.

Since his own curiosity was aroused he decided to be there too, and he disguised himself for the occasion. Officially he had removed his personage to the open country where he would stay until the reptiles had been annihilated or had gone of their own accord.

The day dawned clear. The atomic machine at Elbon had been placed in a great open park in the middle of the city, at a point where it could not be injured by falling building material. People were gathered in thousands about it. The estimation was that over half the inhabitants of the city were there. Hatzho, who wished it known how he accom-

plished his work, had chosen the spot well.

Lee was noticeably absent. Even the spectators saw that and wondered at it, for they had heard much of the man. It was said that he seemed a common Radrokian, except there was something in his mien which suggested another world, and that those who saw him felt the difference at once. Where was he now, they asked one another?

But it was not long before their interest turned to another matter. A small boy was the first to see a dot in the pale sky, a dot growing swiftly, and followed by others similar to it. He called the attention of his playmate, and they both craned their necks. Others noticed and looked up. The space reptiles had arrived!

They were barely large enough for the watchers to see them for what they were when Hatzho opened up his artillery. He pulled a tiny lever, and that was all!

Those who watched felt that something had gone wrong. No fire was seen to shoot from the machine as they had expected, and they began to push back. Murmurs were starting.

But when they looked back at the sky they found that the number of the reptiles had grown noticeably less. Even while they watched the things diminished, though the fact deterred those that followed them not at all. They were coming down to eat, and if their fellows vanished, that meant all the more food for them, or so they appeared to think. Their wings shone like burnished copper, and their great jaws opened. Then they vanished like dust motes borne out of a light beam by the currents of the atmosphere. The last of them was hovering to bite a chunk from a near by building when the power caught it. Not even dust from it floated down.

The watchers cheered wildly. They applauded Hatzho's name to the stars,

but through their shouting ran the cry that he who had made the victory possible appear.

Hatzho felt that now was his time. A few words would win that multitude; he could take the royal palace; and before long Radrok would be his. He stepped forward to say those words, though he realized that the greatest victory he might ever win had just come to him. He cleared his throat.

It was at the same time that Warlahk's men surrounded him. They had been dressed as civilians, ununiformed, and they had him before he recognized them. It was all as easy as the lieutenant had prophesied.

When Hatzho realized what had taken place it was too late to act. And even with his disregard of human life, he would hardly have turned the atomic machine against those who surrounded him. It was a weapon that he could not control; it would destroy, but it would destroy whatever was in its path, cutting a swath for miles. Lee had kept the atomic machine, as he had finally perfected it on Earth, to himself.

THEY were starting to lead Hatzho away when an interruption came. It came from the top of the building which the last space reptile had been ready to eat when it was destroyed, and it came spectacularly.

A figure stepped forward to the edge of the building. It was that of a commanding personage; even at that distance they could all see that.

"Wait a moment," it said, and every one below heard distinctly. They did not know that Lee Navarre was making use of a principle for amplifying the voice, and that that principle had been known on Earth for a century before he left, but they were none the less impressed. Each one of them knew that this was the man they had been waiting to see, so they listened with bated breath.

Not all of them, though. As Lee appeared one of those who had surrounded Hatzho leaped toward the atomic machine. Lee pressed the button on a black, hand weapon he carried, and the man vanished. That was the first time the Radrokians saw a perfected atomic blast at work.

The sight should have thrown the watchers into pandemonium; but it is hard to predict the psychology of crowds. Had the man fallen dead they might have gone wild; since he only vanished they stood in wonderment. As they were then a word might have had almost any reaction.

All his life Lee had been accustomed to swaying opinion. Half his battles had been won by speech from the time he was a student at Tayle until the day he led a revolt which almost won him the world. And he knew that his power lay not in words so much as in him.

"People," he said, "this morning you have seen a menace to your planet destroyed by a new weapon. You know what such an instrument as that, and this"—he tapped the black weapon he carried—"can do." And in some way the words had the quieting effect he wanted to produce.

That was his opening. After that followed a speech which was great, not so much for what it meant, but for what it made his listeners feel.

He spoke of Warlahk, and he made the audience think that while he was sincere the man was not a fit ruler. He spoke of Hatzho, and they felt that while his was a strong personality it was not a ruling one. He carried his listeners with him so that they thought they anticipated his every phrase, that he but put their own thoughts into words.

And he ended with, "Since it is not well that a people should be rulerless

at such a time, choose now an emperor. Radrokians, whom will you have?"

They shouted, "Lih, Lih of Navahr!" And Lee smiled, for that was what he had intended from the first that they should say.

The day was won then, yet before he came down to the throne Lee did a thing which sealed tight the door of the affection he had engendered in the hearts of his audience.

He beckoned behind him and another figure stepped into view. "Since," he said, and as before, every one heard him, "since it is best that I have one of you with me at all times, Na-ani, the daughter of Hatzho, has consented to be my wife. People, salute your empress!"

That was all. After that there was no trouble, for it had been Warlahk who leaped toward the atomic machine and vanished. He was as dead as the space reptiles.

Thus Lee Navarre lost an empire on Earth and won another on a planet so distant that the galaxy of which it is a part cannot be seen by our telescopes; but that did not make it any the less real and dear to its new ruler.

Strangely, Hatzho was not the least angered by the turn events had taken. When he finished gasping and the adjustment was clear in his mind he was as pleased as every one else.

"I had planned it like that all the time," he told Na-ani the first chance he had to speak to her confidentially. "I knew that I would not make a good ruler. I'm too old and unused to such things. The reason I hadn't spoken about it was that I wasn't sure you cared for Lee. Why hadn't you told me, child?"

"That was my secret," she said. For she had known all along what Hatzho thought; but that, too, was her secret.

How Criticism Helps

In this, the first issue in our third year of building the NEW Astounding Stories, I have some suggestions to offer you.

For two years I have read your letters of criticism carefully, thoughtfully, weighing one against the other, checking the trend of opinion in the majority, striving to improve our magazine in keeping with your expressed desires.

But in checking your criticism I am forced to ignore perhaps ten per cent of those received because they tell me nothing. This is what I would like to correct, with your cooperation.

Here is an example: "—your August issue was lousy. Both your rivals print good stories but you have only trash. Your cover was terrible, also."

The writer of the above quotation then proceeded to say that he liked Astounding best of any magazine in the field! So—there wasn't much help to be gained from that, was there?

Then one reader said: "—better tell Williamson to stick to something he understands."

Well! I don't tell our authors WHAT to write. If I did that I'd have a one-track magazine in three months. And I don't think any of us understand perfectly at what point we must shut off our imaginations in the realm of superscience.

This much I do know! We see the best of the crop of science-fiction stories every month, and if a good one gets by it is because we haven't the space to print it and because we do not take advantage of authors by holding stories for years on the excuse of "payment on publication."

You know from the covers last month and this that Astounding Stories, which was the underdog two years ago, is now the popular leader in the field.

It has been your helpful criticism, as much as any other factor, which has combined to bring this about. So it is only natural for me to want all your letters to be constructive. If you dislike one story—tell me WHY! I have always listened; I always will. If you like a story unusually well, tell me WHY; and thus help to guide me for the succeeding issues.

The growing debate as to the amount of science in the stories is very helpful. I'd like a thousand opinions so that I can safely draw a final conclusion.

I want Astounding to reach its full maturity by 1938, and from that time on to maintain its mature vigor for many years! This year we are facing is a vital part of our program of development. We are young and we want debate and constructive criticism. If there isn't any vital criticism, don't try to manufacture some. That only confuses the issue. Don't hesitate to say stories are above par. That is good constructive criticism, too.

I hope we agree and understand each other. I know we have the finest magazine, the best stories, the most capable writers in the field. And I also know that we can continue to improve them all this year.—The Editor.



Pfui, Pfui!

Dear Editor:

Pfui, pfui, double, triple, and quadruple pfui on you, H. H. Welch.

The nerve of some people. If you are so against science-fiction why, oh why, don't you keep it to yourself? I hope you received the letter I wrote you personally. In it, you doubtlessly discovered, I told you more fully just what I think of you.

Now that that's finished, "Dictator" Tucker, did you receive the half cover of a magazine, illustrating a STF story, I sent you? This is my contribution to the SPWSSTFM. The other half will be sent when I am elected super-dictator of your "worthy?????" organization.

Now, I suppose the best way to get this letter in print is to dish out a few bouquets.

The stories? I have read only four of them, but, if the other four—not counting the serial—are as good as the first, they will suit me. *Man of Iron* was very delicious, or perhaps I should say delightful. Poor Lemmans, though—he should have picked a more opportune time to "knock off" Doc Merrin. *The Galactic Circle* was undoubtedly one of Jack's best.

Say there, Mr. Bashore, there was only one wire staple in my April issue of *Astounding Stories*. Maybe the "dictator" is starting on his crusade, and thus far has succeeded in removing only two staples, one from each of our magazines. What say, "Dic?"

Before I forget. Is there any chance of getting hold of some of those three-year-old *Astounding Stories* you mentioned, Bob? That's all, 72, and "Thanks for listening."—Phillip McKernan, 827 Greenwood Avenue, San Mateo, California.

Thank You!

Dear Editor:

It was certainly a pleasure to meet the editor of my favorite magazine while I was in New York. I enjoyed meeting you more than any one else while I was there.

I always turn to your pep-editorial page first.

I'd sooner read that type than the scientific ones. That Jack Williamson story scheduled for next month must be some tale if it beats *The Galactic Circle*. That was a honey of a story. Taines' serial of course continues to entertain. The two novelettes, both sequels, were good, as sequels go. *The Upper Level Road*, and *The Star That Would Not Behave*, were the best shorts in the issue—well written around good ideas. *The Phantom Dictator* was good, except for the ending. I hate madhouse endings.

The cover is a dandy, although what is Saturn doing so close to the Earth? Doid didn't do so well this time. The work looks rushed. Please don't cut part of the illustration off for blurbs and such, as in *Rebellion*.

I wish you could use a thinner paper throughout the magazine.

What has happened to Charles W. Diffin? He used to write some excellent stories for *Astounding*.

Can't you spare a page or a half page for the names of next month's stories? Yours till *Astounding Stories* has a quarterly supplement.

Welcome to *Astounding Stories*. J. Harvey Haggard!—Jack Darrow, 4224 N. Sawyer Avenue, Chicago, Illinois.

Enthusiastic!

Dear Editor:

Had I written this letter in May, when I planned, I might have made a remark something to this effect: "Astounding Stories is about on a par with its leading rival." But, after reading the June, July, and August issues of said publication, I am thoroughly convinced that *Astounding Stories* is leader "what-am" in its field.

My enthusiasm was without bounds as I finished Jack Williamson's, *The Galactic Circle*. I was also glad to see Nat Schachner back again. *The Upper Level Road*, by Warner Van Lorne was very good, as was *Lost in Space*, and *Man of Iron*.

Twelve Eighty-Seven is accelerating, and if I miss the conclusion of it something rash will happen around here.

I hope you will print this letter in Brass Tacks because I want other fellows, about my age, who are true science-fiction fans, as correspondents. I am 14 years old, and have already connected with one good correspondent through Brass Tacks but crave more. So come in and write to me, fellows.

A few authors that I want to see in Astounding Stories are: A. Connel, Leslie Stone, and Festus Pragnell. A few authors that I want to see more of in Astounding Stories are: John Russell Fearn, Eando Binder, Stanton A. Coblenz, J. George Frederick and Edmond Hamilton.

In the July issue you did not list Schneeman with your story illustrators along with Dold and Marchioni. However he illustrated *Exiles of the Stratosphere*. I don't like the illustration, the story or the author, Frank B. Long, Jr.

Let's have another story by Stanley G. Weinbaum about Ham and Pat. *The Lotus Eaters* and *Parasite Planet* were both extremely interesting.

Before I close I want to tell you that I enjoy the editorials a lot. Best of luck.—Douglas E. Blakely, 4516 Edina Blvd., Minneapolis, Minnesota.

Welcome!

Dear Editor:

Allow me, as a new Brass Tacker, to compliment you on the fine magazine you have in Astounding Stories. I started to read Astounding Stories with the first issue, but dropped it soon after because it was literally dying on its feet. When I heard that Street & Smith was taking it over, I immediately started to read it again, and have been ever since.

Your stories, in my opinion, are all excellent and well written, although I will say that a few have fallen short of the Astounding Stories standard. Your thought-variant scheme has really brought out some novel and thought-provoking stories, such as in the August issue: *The Galactic Circle*, *The Upper Level Road*, *Star That Wouldn't Behave*, and *Twelve Eighty-Seven*. All were splendidly written and intensely interesting.

The author of *Upper Level Road* can make a swell series of stories from his idea. Let's have a sequel to this one.

Your paper and edges are O. K. with me, as are your wire staples—three boos for Mr. Tucker. Every one praises artist Dold; well, he is fine, but his human beings are sometimes out of proportion, and some are positively evil looking. The covers are plain and conservative.

Some of the letters in Brass Tacks make me sick, others are humorous. I quite agree with Mr. Welch in the August issue. This idea of bickering, and slamming—often in a profane tone—is all nonsense. If every one would think twice before they wrote their letters, they could put more sense in them. After all, fellows, the life of an editor is not a life of ease. He is trying to please everybody, which you realize is very difficult.

Science fiction is over nine years old, and all stories now written revolve around an idea that was put on paper years ago. The "new policy" and "thought-variant" schemes have, in a measure, brought out some new ideas, but very few really new ones. So, come on, fellows, instead of always slamming the editor in the face, why not give him some pats on the back. He made Astounding Stories what it is to-day, brought it from the bottom to the top. More stories, better authors, more pages, better illustrations, all for twenty cents? That is a bargain.

This is my first letter to Astounding Stories, Mr. Editor. Do you think you will have room for it in Brass Tacks? I hope so. Possibly what I have said will make some other "Tackers" think sanely next time they write.

Please be assured of my continued patronage and accept my wishes for your continued success.—Wm. G. Dexter, 643 East 127th Street, Cleveland, Ohio.

Tastes Differ!

Dear Editor:

I've noticed quite a few letters in Brass Tacks lately concerning the amount of science a science-fiction story should contain.

Tastes differ in everything including science fiction, but I think most of your readers prefer stories with the science cut to a minimum—just enough to make the story plausible. The Brass Tackers in the thick of the Van Kampen controversy, will probably not agree, they seem to prefer science with a little fiction thrown in for good measure.

To support my claims, compare *The Legion Of Space*, *The Mightiest Machine*, and *The Skylark Of Valeron*. *The Legion Of Space* contained about one-tenth the science of the other two stories, and, with the possible exception of *Rebirth*, was the greatest story yet published in Astounding Stories. Remember the all-powerful AKKA that destroyed the Medusa of Yarkland? Williamson did not mar his story by describing in minutest detail how this force operated.

Can't you see Smith or Campbell grinding out page after page of descriptive and explanative data for the reader to wade through before the story gets anywhere? They both write interesting stuff, but until they cut out some of the tedious parts, their stories will never be great. Which reminds me of *The Avatar* I just finished—two solid pages of chemical equations, reading like a textbook in college chemistry. That's what your readers mean by too much science.

How does Gallun do it? Sons of famous fathers seldom equal their dad's reputation, but *The Son Of Old Faithful* certainly did. That's the best story of the year so far. *Menace From Saturn* was also excellent, there were enough ideas in it to have stretched it into a novelette.

Mr. Ellissen called Brown's covers blatant and advised you to get Paul. What a laugh! If Brown's covers are blatant, there is no word that can hope to describe Paul's eye-shocking work.

I see Taine's serial ends next month. From the looks of the illustrations it should be good. I hope the new serial is by Williamson, another like *The Legion Of Space*.

It would be better to issue a semimonthly or a quarterly than a sister magazine. Keeping two magazines, featuring the same type of fiction up to a high standard is very difficult. Yours for a continued great Astounding Stories.

—Richard H. Hamilton, 5141 Dresden Avenue, St. Louis, Missouri.

Explanation!

Dear Editor:

I was about to write a nasty letter, in answer to some fans who write in to Brass Tacks and criticize authors and writers of letters unfairly, but Hubert Allcock of New Jersey has taken the words out of my mouth. I want to tell Willis Conover, Jr., of Washington, D. C., that he did not get the point in the story, *Set Your Course by the Stars*.

Here is what I mean, Willis. Mr. Binder, in that story, did not mean that the reflected light from the stars was making space whirl, but that there were so many stars visible that black space was not visible between them. In other words, each star seemed crowded upon its neighbor. I hope this helps you get a clearer understanding of the idea under the story.

Oh, ye! editor, I'm glad to see that you have secured Haggard to entertain us. This month's cover reminds me of the old Astounding Stories, lurid-eye attraction and (hohroho) red space. Please give us some news as to how the semimonthly argument is coming out, and, most of all, will we have a big quarterly? With every issue, our magazine is forging steadily farther and farther ahead of its rivals. *The Upper Level Road* in this issue demands a sequel, and

if we don't get one, sssssssssss, my ray gun will get you.

I've done enough broadcasting in this letter, so this is Space Ship No. 1423-S, signing off.—
Lyman Martin, 65 Howe St., Marlboro, Mass.

Titanic Happenings!

Dear Editor:

Some of the letters in Brass Tacks of the August issue were very interesting. H. H. Welsh slammed practically everything connected, even remotely, with science fiction. Hubert Allcock squeezed Kaletsky between his thumb and forefinger. Donald Wollheim disclosed high treason and treachery in Bob "Dictator" Tucker's SPWSSTFM. Truly a month of titanic happenings!

Jack Williamson's story brought back something that had been missing since the end of *The Legion of Space*. The other stories were great also. *The Son Of Redmask* was a pleasant surprise indeed. By the way, when are we going to have another story by Stanley Weinbaum? Soon, I hope.

I am still waiting for that announcement declaring that you will publish a big, juicy quarterly. The semimonthly plan is good, but I like the quarterly idea better. It would not involve that risk of lowering Astounding's high standard with regard to stories. Another thing, I noticed almost every reader who appeared in Brass Tacks asked that you go semimonthly and also publish a quarterly. Here's hoping.

Whatever happens, I hope you don't try to imitate the old Astounding too much. A little adventure is quite all right. *Menace From Saturn*, and similar stories are good reading and I like them, but I hope you don't heed the readers who want you to change the entire magazine over to the blood-and-thunder type.

Keep Astounding hitched to that star.—
L. P. Wakefield, 2832 Marshall Way, Sacramento, California.

Best Yet!

Dear Editor:

I enjoyed the August issue of Astounding very much. It is, undoubtedly, the best you have published so far. H. V. Brown's cover was excellent, and the fact that he possesses an unusually fertile imagination is obvious. This month's painting is his best effort to date.

The story it illustrated was excellent, too, not only for the unique idea behind it, but also because of the picturesque descriptions and life-like characterizations it contained. For that matter, has a Williamson story ever appeared in Astounding that was anything short of excellent?

Rebellion was a fitting sequel to *The Machine* and *The Invaders*. Don Stuart has a very refreshing style of narration. By the way, what about that promised sequel to *Twilight*, Stuart's crowning achievement?

The Son Of Redmask lacked that vital something that was so evident in *Redmask of the Outlands*. It was only fair reading.

The short stories were all very good, especially *The Star That Would Not Behave*, *Man of Iron*, and *Lost In Space*, a very good study of human character, by J. Harvey Haggard. I'm glad to see that he's finally arrived in Astounding.

I'm also glad to see that you're finally allowing more than one illustration to the longer stories, but I do wish you'd let Elliot Dold illustrate the entire magazine. He's the best interior illustrator ever to draw for any science-fiction magazine.

Turning to Brass Tacks, we find a curious letter from one, H. H. Welsh, who evidently does not think very highly of this particular type of fiction. It's certainly a pity that he hasn't enough intelligence to enjoy such fasci-

nating literature. I admire him though, for his frankness, even though his opinions are misguided. For his information, a certain science-fiction magazine has a circulation of almost twenty-five thousand copies per month. I'll bet Mr. Welch receives one of Hubert Allcock's "cute little notes." Do a good job on him, Hubert, ol' kid. Incidentally, that's a nice, interesting letter you wrote Mr. Allcock; which is more than I can say for my drivel.

I see that the September issue will complete your second year under the Street & Smith banner. You can expect another letter from me then, telling you what my impressions are, and listing your best stories and authors. I wish Robert Y. Zachary, of Washington, D. C., would communicate with me. When he wrote to me, in answer to my letter in the June Astounding, he forgot to give his address.—Corwin Stickney, Jr., 28 Dawson St., Belleville, N. J.

High Standing!

Dear Editor:

I wish to thank you very much for printing my last letter in Brass Tacks. I write this in hopes that it, too, shall find its way into that column.

It is too bad that Taine's *Twelve Eighty-Seven* has to take up valuable space in Astounding Stories. It certainly is not astounding, and is not the science-fiction type at all. Taine should have taken it to some adventure or war-story magazine, rather than Astounding.

I bought a copy of one of your contemporaries' magazines lately, chiefly because I saw, "Now—15c" flashed all over the page. I was curious to see what change had occurred in the lowering of the price. It was just as I thought it would be. The stories were worse than ever. The only two good features that magazine has now is the club and the editorial note at the bottom of each letter printed in their reader's column. By the way, when is Astounding going to have the much-wanted editorial note?

Ramon F. Alvarez del Rey's letter in the August issue was a feature all by itself. It showed a great amount of intelligence and power of observance on the writer's part. I hope that, in the future, Mr. Clyde C. Campbell will be careful not to use expressions like "isotope of water" in his stories. Please leave those silly letters by Tucker and Wollheim out of Brass Tacks. After all, that worthy column should be for serious discussion, not humor(?).

I wish Mr. R. R. Winterbotham would explain in greater detail, in Brass Tacks, what he means by "seeing the solar system as it was millions of years ago." How could such a thing be possible, Mr. Winterbotham? I await your explanation of that occurrence quoted from your, *Star That Would Not Behave*.

Meanwhile, dear editor, may Astounding Stories keep its present high standing.—Willis Conover, Jr., 2800 Wisconsin Ave., No., Washington, D. C.

Sequels Surpass!

Dear Editor:

The August issue was more or less dedicated to sequels. Both of the sequels surpassed their predecessors which, it seems to me, is unusual.

Congratulations on procuring *The Galactic Circle*, by Jack Williamson.

In *The Phantom Dictator*, when Dr. Brown went to see the President, he said that Willy Pan had suggested sharing the nation's wealth. The only Willy Pan cartoon Dr. Brown had seen was *The Magician*, and although Willy did suggest that plan it was not supposed to have had an effect on the conscious minds of the listeners. It did have no effect on the mind of Dr. Brown because he withstood the hypnotic

effects of Willy's wand, but every one else in the country who had seen Willy had succumbed so they could not remember what Willy had said at the last. Therefore, would not the President have become suspicious and would he not have ordered Dr. Brown thrown in jail?

Now Mr. Conover, Jr., a word to you. We see because light of certain wave lengths impinges on the retina of our eye and the image is transferred to the brain. There need be no gas between the body emitting and the body receiving the light. The thing Bando Binder was trying to get at was that space is so filled with stars that no matter which direction you look you would see a solid mass of them, not because they are close together, but because they are nearly in line. We do not get that effect on Earth because our atmosphere blocks the light of the fainter stars. Also I would advise you to look up the meaning of the word "bi-monthly."

Why, oh, why, doesn't somebody print a fantasy magazine so we can get rid of the kickers who find some science in the stories.

And now, after many laborious years of study and work, I have found the reason that the readers pine for the "good old days." It's this way—the science was so scarce in those days that when one did find some it gave him a feeling of exaltation which is lacking to-day. Maybe a fantasy magazine would fill that need, too.

And as for the blasphemous propaganda you allow to be spread in Brass Tacks by that fiend in grand exalted booleywag's clothing, Donald Wollheim, what right has he to raise his hand against that greatest of all dictators, Bob Tucker? Even now I am preparing a booklet which is to be put together with chewing gum. Yes, wire staples are just about a thing of the past. We will soon have an international law—written in Esperanto—causing all users or owners of wire staples to be put to death. So, beware, editor.

Why not have a cover something like the August issue, but with no written matter on it, on some future issue? Who could resist opening it to see what it was, and having opened it who could resist looking through it, and having looked through it who could resist reading it, and having read it who could resist buying another, and having bought another who could resist—or maybe I'm wrong.—Frank Driggers, Quarter 22, Fort Douglas, Utah.

Three Cheers!

Dear Editor:

You seem to have cornered all the leading science-fiction writers with the exception of the one who is the greatest of them all. You know who I mean. H. P. Lovecraft. He's the one and only and is better than Kline, Burroughs, Cummings, E. E. Smith, John W. Campbell, Jr., or any other popular author. I feel that Astounding lacks something without this master of fantasy. You claim he writes weird fiction exclusively, but there really isn't a very distinct borderline between the two fields, science and weird fiction. So let's see H. P. Lovecraft, the fantasy writer, added to Astounding's list of authors.

Of the authors you have writing for you at present, I like Frank Belknap Long, Jr., about the best. Last-man stories are always intriguing, and his are the *crème de la crème*—the cat's pajamas, in other words. How about some longer stories by Mr. Long, a novel or a novellette, perhaps? I'll bet he could write a great thought-variant. Donald Wandrei is another excellent writer.

Astounding Stories is far better than either of its competitors, so keep up the good work. And hang on to your wire staples. Three cheers for the IAOPUMFSTFUPUSA!!!

Well, here's hoping to see Lovecraft in Astounding's pages, and more from Frank Belknap Long, Jr.—Ralph Harnser.

Three-dimensional Effect!

Dear Editor:

Whether Wallace West, in *The Phantom Dictator* in the August issue, wrote from actual knowledge or from imagination, I do not know. In regard to the motion-picture cartoon in the story, he writes: "But it was the background in which the creature moved that intrigued me most. Not only was the picture presented in natural colors, but by a new advance in screen technique it had a lifelike three-dimensional effect."

It may be of interest to Mr. West—should he be ignorant of the fact—and to your readers, that a good many of the forthcoming Hollywood cartoons have actually attained a seemingly three-dimensional effect. This apparent depth is obtained by using miniature sets in the background, and the illusion is further created by the contrast with the ordinary drawn comic characters appearing in the foreground.

Allow me to say that I have always held the view that the editor of any magazine should run his publication to please himself—regardless of readers' opinions to the contrary. That is, of course, with the exception of "Dictator" Tucker's suggestions, for any one must realize that the age of the wire staple is rapidly declining.

I should be glad to hear from any Astounding readers interested in science-fiction films.—E. H. Lichtig, 6455 Hayes Drive, Hollywood, Calif.

Up to Standard!

Dear Editor:

Thanks for the August issue. As much of it as I've read seems to be up to standard. The story, *The Star That Would Not Behave*, has me tangled. As the author explains it, the star and its system were not really here but merely the light waves given off by our own sun countless light years ago. These waves had traveled around the universe, and had either met the Earth where it started or half-way in its circumuniversal journey. And the star is going only "between fifty and sixty miles per second." Now wouldn't this star seem to be approaching at the speed of light, either plus or minus the few miles per second that our system moves? What I mean is this:

As the author explains it, the star is not here in person, but only as a visible image of light. It should therefore seem to be moving at the speed of light. It might have gone forward in the direction that our system is moving, or it might have been reflected the other way, so as to meet us head-on. In one case it would be going a few miles per second more than the speed of light—in relation to the Earth—and so couldn't possibly be seen coming. And after it has passed, it and the Earth would be drawing apart at a little more than the speed of light, so it couldn't be seen leaving. We might glimpse it for that infinitesimal fraction of a second while it is directly abreast of us, neither visibly coming nor going. Or if it came upon us from the rear, it would be moving nearly as fast as light—in relation to us—but not quite, as we would be moving away slightly. Then after passing us it would continue on at the same speed, relatively. It could be under observation for, at most, a few hours. But the author makes it three years. Won't some kind reader come to the rescue of my unenlightened self on this subject?

Now for your readers. That's what I wrote this letter for anyway.

Public enigma No. 1: Mr. H. H. Welch, who rates first place among Brass Tackers. Another Kaletsky in our midst! For your I-dare-you-to-print-this attitude labels you as merely another crank. What do you read it for, if you consider science-fiction so vile, inane, imbecilic,

etc.? You probably have partial basis for that statement, but it is a little too all-inclusive. I have read some putrid stories in scientific-fiction magazines, but I would hesitate to pass judgment on the entire field of science fiction so severely, without giving some definite proof.

You ridicule the noble efforts in our Brass Tacks. In most cases these letters honestly express the writers' opinions, and are not intended for wit or drollery. In a few cases, e. g. the Wollheim-Tucker battle of the millennium, they are carrying on a battle of wits—or otherwise—in an endeavor to please and amuse the readers. They are the spice of the whole magazine.

Also, Mr. Welch, it is fair and aboveboard to use humor or light ridicule as a weapon of defense or offense in these columns, but such blunt sarcasm as yours is scarcely permissible. And you should never make such self-committing and boldly accusing charges without being prepared to back up your opinions with fact. I presume the H. H. stands for "hard-hitting."

Second: Private to Bloomington's Huey Long, keep up the good work. Although you never say anything really worth reading—thought-variant, I mean—still you relieve much monotony. You and Wollheim are really interesting, even if you do gain it at the price of a reputation for idiocy and incoherent ravings.

Third: Hubert Allcock's literary achievement should have been listed on the title page. I consider it as sound and interesting as any story. A letter like that is not merely a communication, it is an unassailable essay.

Fourth: Miss Hook. Hurrah. By hook or by crook, somebody has at last found the courage to defend good old Charles Fort. That letter contained a good rebuke to those who are too lazy to think seriously about the possibilities of *Lo!*

Fifth: Willis Conover kicks at *Set Your Course by the Stars*. His argument is hard to dispose of, as it doesn't prove anything itself. He says that when light hits something, you can see it. Granted. And that when there is nothing for it to hit, you can't see it. Also granted. Then he says that the man in the ship could not have seen all those stars. Well, I say he could.

Because, as Willie should grant, the light waves are there, even if there isn't anything to hit. When the man looks that way, the waves enter his eyes via the pupils, thereby hitting something, and consequently rendering them visible. That is; as Willie proves, he doesn't see the light waves themselves, but he does see the stars on which they originated, because the waves hit the retina of the eye and are changed from light to sensation, which reaches the brain and tells him there are stars in the sky. Mr. Conover evidently believed that the whiteness was caused by the man seeing these waves sideways as they went past, while the author meant that he saw the waves endwise, as is natural. Or does this sound too disjointed? Willis, if you want to argue this more thoroughly, why don't you come over and see me sometime? I won't take the initiative, but if you want to write, I'll guarantee to answer.

Sixth: Ramon, etc., of Washington, D. C., Congratulations for showing C. C. Campbell the difference between elements and compounds. I've only taken a year of chemistry, and didn't do any too good in it, you bet, but when he talks of "isotopes of water" and heavy water as "H₂O₂" I foam at the mouth. No kidding. Well, he's been properly chastised, so that's that.

Seventh: Ackermann turned in the useful helpful criticism and his column was as edifying and quietly interesting as ever.

Seventh-and-a-half: I see you put Wollheim in last place. He now ranks 15th out of a possible 15—Tucker was 5th! Cheer up, Wolly, I always save the best for the last anyway.

A few last comments: Your cover's O. K.; stories about average; Brass Tacks hard to read—type is looking worn; and how about an editorial?—Bob Cloud, 120 West Martin, Elma, Washington.

More Science!

Dear Editor:

I am taking this opportunity of writing to give you my opinion of *Astounding Stories*, the July issue in particular.

The Son Of Old Faithful, by Raymond Z. Gallun, was a fitting sequel to its predecessor, *Old Faithful*, but I should not call the idea of sending fuel to the moon and using the latter as a starting-off point, a "thought-variant," for surely a rocket would expend the same energy in escaping from the Earth whether it was heading for the moon or for Mars.

I notice that one reader, Henry Bott, kicked against science in your stories. I must protest against this; give us more science. Mind you, I don't blame him for kicking against authors who squeeze a scientific text book into one chapter, as did C. C. Campbell in *The Avatar*. The scientific facts should be spread out, and should be so intermixed with the story that they cannot be separated.

I understand that you are contemplating issuing a companion journal to be devoted to the more adventurous type of science fiction. If you do, I, for one, will not buy it. I came across a copy of one of the former publisher's *Astounding Stories*, and believe me, it was vile.

With regard to *Murray's Light*, by Donald Wandrei in the June issue, I recently read the following paragraph in a scientific periodical: "Light bulbs that glow continuously for six months without electric current to light the filaments may be used for illumination in the future. This prediction was made recently by Prof. Charles T. Knipp before the American Physical Society; after he had outlined his experiments with a bulb filled with nitrogen gas. Afterglow from this lamp has given light for as long as three hours after it had been charged with an electric flash for one tenth of a second. Brilliance of these lamps was found to increase, rather than decrease, over a certain period of time."

In conclusion, may I inform your readers that I am the secretary of an international scientific correspondence society, details of which I will be pleased to send to any one interested.

Trusting that forthcoming stories will maintain the high standard of the magazine, I remain, Yours sincerely—Douglas W. F. Mayer, 20 Hollin Park Road, Roundhay, Leeds 8, England.

Take Out the Wire Staples!

Dear Editor:

I have kept my trap shut so far, but that letter by that great upholder of science-fiction, H. H. Welch, just makes my pen, typewriter, and pencil want to wiggle.

Sir Welch starts out by subtly placing himself in the class of cultivated mind and taste, thereby making the rest of us a bunch of Bowery bums. I thank him for the compliment, for is not a single hint from those great lips of his a compliment, whether it be an honor or a slam?

Secondly, he accuses us of being judges of science-fiction, and yet he goes ahead and proclaims himself a judge of literature, and passes personal judgment upon science-fiction.

May I ask if he by any chance had studied science-fiction, or has he read one story in some paper or magazine, and thereupon based his judgment on that?

I also see that he likes our tickling humor, and to that I say you must take into consideration that we are not humorists, but merely scientific-fiction addicts who try to (and originally to our letters).

Lastly, I ask what would the Honorable Welch have us read who like stories other than those of the every day world? Maybe he would suggest fairy tales.

Now that that is off my chest, I shall proceed to tell you what I think of the magazine I

proudly and defiantly wave at the Honorable Welch.

Firstly, editor, don't go semimonthly, because I would have four magazines to buy instead of three, and I would soon go bankrupt.

Secondly, why not answer the letters in Brass Tacks?

Thirdly, even though the menacing shadows of Wollheim's cutthroats hover over me I say nerts to him and Welch and please take out the wire staples.

Fourthly, I have no kick on the stories, cover and edges. In other words keep up the good work but take out the staples.

Lastly, I have said enough for a fourteen-year-old so I shall only add print this in Brass Tacks or throw it away but take out the wire staples in Astounding. I believe I have made myself clear.—John Crockett, 327 Sarah Avenue, Iowa Falls, Iowa.

Happy Medium!

Dear Editor:

Though I have been a reader of Astounding Stories since January, 1931, this is my first letter to Brass Tacks. Even now, as several years ago, there's comment on the type of stories in our magazine. Some say there's too much science and not enough fiction, while others say there's too much fiction and not enough science. So, Mr. Editor, I think you'd do well to keep the magazine at its present happy medium. Most of the stories aren't too scientific for me to understand, and besides being interesting and enjoyable, they are, in a way, educational as well. I've certainly learned a lot from some of them.

I wish more girls would write in to Brass Tacks. A few of them used to several years ago, but were given the royal razzberry, by some of the opposite sex, and I guess have been rather hesitant about writing in ever since. Come on, girls, don't be bashful!

Mr. Editor, I believe half of the success of your magazine is due to the colorful and interesting covers. That's what caught my eye when I first saw it on the news stand.

I'd be interested in corresponding with any one interested in amateur radio. Best wishes to Astounding Stories.—Vivian L. Pritchett, P. O. Box 415, Mountain View, California.

A List to Consider!

Dear Editor:

I am very much pleased with the July Astounding. The two previous issues had led me to expect at least a slight let-down, but instead I find an array of truly excellent stories.

Twelve Eighty-Seven is a great story. It is different from your previous serials, yet it is as good in its way as they were in theirs. It is a relief to read an occasional story of this type.

I've been looking forward to Hamilton's appearance between your covers, and what a story he gives us! It easily takes first place in the issue. Why wasn't *The Accursed Galaxy* labeled "thought-variant"? It certainly deserved that description. And the recent *Set Your Course By The Stars* was truly thought-variant also. *The Far Way* is a tremendously intriguing and beautifully written story.

Liquid Power is excellent, save for slight touches of amateurishness.

The Avatar is a splendid story, but is marred by about a half page of unintelligible scientific data which seemed dragged in for the purpose of showing the writer's knowledge of science.

As for *The Son Of Old Faithful*, I cannot say that it is as good as the original. However, it is a fine story. I have not as yet read the other stories in the current number.

I don't think much of your recent covers. I'm a Wesso fan. Also your new interior artist is not so good. Who is he?

There are a number of writers who wrote for the old Astounding Stories who would be welcome additions to your staff of authors. When F. V. W. Mason writes another yarn like *Phalanxes Of Atlantis*, don't fail to snap it up. Let's have something by Victor Rousseau, if he can equal *The Atom-Smasher*. I should like a story by Arthur J. Burks if it were as good as *Earth The Marauder*, or one by S. P. Meek like *Giants on the Earth*. Anthony Gilmore could surely approximate those gripping tales *The Affair of the Brains* and *The Passing of Ku Siu*, and S. P. Wright should be able to give us one like *The Forgotten Planet* or *The Dark Side of Antri*.

You might let Harl Vincent revive his *Vagabonds Of Space*. A good series or two adds to the interest in the magazine without the disadvantage of serials.

Finally, let me say that, although I like humor in the Brass Tacks department, I do not care for the feeble attempts at such on the part of Bob Tucker and others. I hope they soon cease to bore us. Of course, I prefer smooth edges.—Donald Allgeier, Mountain Grove, Missouri.

Comfort!

Dear Editor:

Although I am rather young, I have been a reader of science-fiction for about seven years, and I have found it a great comfort to be able to get away from the ordinary run of fiction and read something new in stories by capable writers.

To get down to business, the reason I wrote you is the unspeakably childish letter of Mr. H. H. Welch. This writer must be, I thought, similar to the type of child who wants attention so badly that he will say anything to receive it. As my judgment upon him I shall quote to him a part of Mr. Hubert Allcock's letter printed in the same issue, August.

Mr. Welch, "you are merely a small ladybug! You do not bite! You do not irritate. You merely tickle. I have no desire to crush or harm you. I shall scratch you gently, for you are a gentleman ladybug. Please pick up your marbles and fly home."

That's all for Mr. Welch. Now for the editor.

Mr. Editor, I believe that Astounding Stories, with you at the helm, has made history. The greatest epics of modern science-fiction have graced your pages, and there is every evidence that your standard will not be lowered. Such stories as *Rebirth*, the greatest piece of modern science-fiction; *The Skylark Of Valeron*, another incomparable *Skylark* story from the able pen of Dr. Smith; and *The Mightiest Machine*, excelled only by the aforementioned two—not to mention such stories as *The Warriors Of Eternity* and *The Galactic Circle*, or the innumerable short stories, not equaled by any other magazine—have made your magazine the best of its kind on the news stands.

Before closing, I would like to venture a few criticisms of the magazine, which you may do with as you see fit. First, as I am one of those persons who read from cover to cover, I am often left with a bad taste in my mouth as a result of the reading of one of those incomparably idiotic letters of Mr. Tucker and his enemy in crime, Mr. Wollheim. As I am, I believe, an average reader, I assume that others have felt the same emotions upon finishing the drivel they hand out. In my opinion I can indicate my contempt for them by a loud long *humph* produced, in case you don't know, by rapidly exhaling the air from my lungs through my nose and mouth. Please use Brass Tacks for intelligent discussion only. I am also in favor of a quarterly and a size suitable for binding. I suppose you will not print this, but if for some unfathomable reason it finds a berth in Brass Tacks I may write again sometime and expound my pet theories to all who care to read.—William L. Hathaway, 508 North 14th Street, Kansas City, Kansas.

Brass Tacks' Record!

Dear Editor:

I was walking through town one day and witnessed an amusing incident which I thought would interest you, so here it is:

Time: Saturday night.

Place: Corner news stand.

Characters: Astounding Stories, a dime novel and a science-fiction fan.

Dime Novel trying to get a wink of sleep. Astounding Stories, feeling lively, making a loud racket whistling and singing (roar of rocket motors and hissing of rays).

Dime Novel, in irritated voice: For Pete's sake, can the noise and let a guy sleep!

Astounding, with a couple of extra loud roars and explosions: Whoopee! I can't help making all this racket. That noise you hear is the new liquid power Don Morrow has invented and is trying out in his new space ship. Whoopee, hear it go! It's the most remarkable thing I have ever seen!

D. N.: Phooey! you science-fiction books make me get disgusted!

A. S., cutting down the noise and gazing in wonderment: Why?

D. N., shrieking: Why? Look at all those insane, impossible stories you are fed with! Heh! It's a wonder you don't explode and disintegrate, with all the murderous weapons and rays you carry!

A. S., puzzled: But how can anything happen to me? Ever since I remember, I have been doing the same work I am now and see no harm in it. In fact it's so exciting, hearing new ideas and meeting new people—like Stuart, the time-traveler, and that queer Martian, *Old Faithful's* child, No. 775, and—

D. N., breaking in: That's it! Those crazy, impossible ideas! You never contain any sane stories like I do! Good, everyday adventures that don't leave one dizzy, wondering what it's all about after they read them, like your stories do. I ask you! Do half of the people who read your stories really know what it's all about? No, I say! How can they when they are used to reading the adventures I specialize in?

A. S., suddenly silent and thoughtful: I—I—never really thought of it like that—

D. N., screaming: Of course you wouldn't! How could you? When your mind is full of your own importance? Too full to think of others!

A. S., in a small voice: But I always meant to do right. I always thought I was helping to add to people's knowledge by bringing new ideas into their reach—perhaps I may be a little too deep for some people, but— What about your stories? They aren't real either, so why upbraid me?

D. N., puffing with pride: No, they may not be true but they are so much more logical that they appeal more readily than yours do, to most people. Er—ah—more people read me than they do you, heh, heh!

A. S., in a thoughtful voice: Perhaps it's because they don't know me well enough—

D. N.: Phooey! 'Pst—here comes some one! I'll bet he chooses me before you!

Eyes glared through dark-rimmed spectacles belonging to a portly gentleman, fat fingers reached out and clutched D. N. around the middle, pages flipped rapidly while the eyes glared at the contents.

D. N., writhing in agony: O ow! He might be a bit more gentle with me. His thumb is digging an inch into my stomach! Owow!

Pop! D. N. falls back into his place, somewhat bedraggled in appearance.

D. N., raging: Phooey! He doesn't know a good book when he sees one!

Fat fingers grab A. S. Bespectacled eyes grow interested as pages are scanned. One hand places A. S. under an arm while the other reaches into a jingling pocket.

A. S., triumphantly to D. N.: Well, old pal,

good-by!

I'm very pleasant to meet such a popular person as you, but I must go to sleep and don't brag so. Perhaps you'll have better luck next time!

D. N., shrieking with rage as A. S. disappears around the corner: Are you trying to insinuate that I was bragging—

Well, editor, since I am here I may as well report that I have a couple dozen people reading Astounding Stories who didn't know of its existence till I started my campaign.

I enjoyed all the stories in the July issue and *Twelve Eighty-Seven* has me on needles and pins waiting for the rest.

The Brass Tacks department this month, too, is a record. I got a big kick out of most all the letters, especially the one by E. E. Smith. Has the "keeper" Mr. Wilson mentioned, located the "staple nut" Tucker yet? To bring him back to sanity, Mr. Editor, I would suggest that you mail him a special magazine with extra-sharp thumb tacks inserted in place of the staples. The sharp jab he would receive, while trying to dig out his imaginary chewing gum, would bring him back to normal.

By the way, has Mr. van Kampen any hair left after all the abuse and uncomplimentary remarks he has been showered with? He sure gave plenty of people something to worry about!

I'm for you, Mr. van Kampen, and don't give up the ship—rocket!

Well, I shall leave now, Mr. Editor, till some other time. Lots of luck with your work.

—Miss Ethel Poppe, Box 727, West Brownsville, Penna.

Taking a Crack at it!

Dear Editor:

It seems to be the order of the day for all the readers to suggest the authors they'd like to see in A. S., so I might as well take a crack at it. What about D. H. Keller and S. K. Barnes? Both of them can do stuff more satisfactorily than David R. Daniels, whoever he may be. Wishing you the best of luck for future issues.—P. W. Wyatt.

Insinuation?

Dear Editor:

May I congratulate the magazine on its really beautiful story by Hamilton about the captive, Monad, in the evolving galaxy? Persons of sufficient intelligence will recognize in this story a classic for the ages. Its place in fiction is assured by the clever part where the reporter displays almost human intelligence twice in the same week.—F. A. Proctor, Brielle, N. J.

Letter Limit, Too?

Dear Editor:

I skipped a month in writing but not in reading this magazine, so don't despair. Whether you believe me or not I always turn to the editor's page before reading anything else because it is like traveling into the future.

Mr. Editor, is there some way in which the readers could send in a ballot for a purpose of voting on a word limit so that more readers could get their letters in Brass Tacks? If there is, let us know by printing your answer on the editor's page.

The July and August issues of Astounding are very good, excellent and tops, all in one. I see we have Redmask back with us again, another achievement. Believe me, I sure am looking and waiting for next month's Astounding. Please unscramble this letter, and put it in Brass Tacks.—Ross Wilson, Jr., R. F. D. 2, Box 89, Chesterfield, Mo.

SKINNY?

I'VE FOUND A NEW QUICK WAY TO GAIN WEIGHT

Thousands Quickly Gain 5 to 15 lbs. New, Easy Way

DON'T think you're "born" to be skinny and friendless. Thousands with this new easy treatment have gained normally husky pounds—in *just a few weeks!*

The real reason why great numbers of people can't seem to gain an ounce, doctors now say, is they fail to get enough health-building Vitamin B and iron in their daily food. But now with this new discovery which combines these two vital elements in little concentrated tablets, hosts of men and women have put on pounds of firm flesh—in *a very short time.*

Not only that, but thousands have also gained a naturally clear complexion, freedom from miserable indigestion and constipation, glorious new pep.

7 times more powerful

This amazing new product, Ironized Yeast, is made from specially cultured *ale yeast* imported from Europe, which is the richest known source of Vitamin B. By a new process this yeast is concentrated 7 times—made *7 times more powerful.* Then it is *ironized* with 3 kinds of strengthening iron.

If you, too, are one of the many who simply need Vitamin B and iron to build them up, get these new Ironized Yeast tablets from your druggist at once. Day after day as you take them, watch skinny limbs and flat chest round out to normal attractiveness. Skin clears to natural beauty, new health comes — you're an entirely new person.

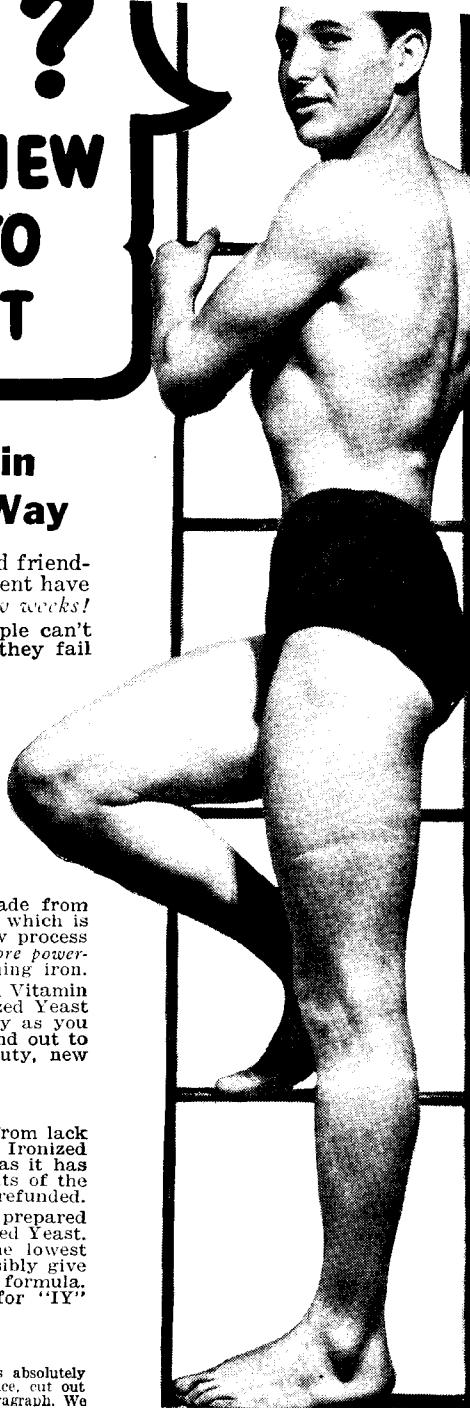
Results guaranteed

No matter how skinny and rundown you may be from lack of enough Vitamin B and iron, this marvelous new Ironized Yeast should build you up in a few short weeks as it has thousands. If you are not delighted with the results of the very first package, your money will be instantly refunded.

Only don't be deceived by the many cheaply prepared "Yeast and Iron" tablets sold in imitation of Ironized Yeast. These cheap counterfeits usually contain only the lowest grade of ordinary yeast and iron, and cannot possibly give the same results as the scientific Ironized Yeast formula. Be sure you get genuine Ironized Yeast. Look for "IY" stamped on each tablet.

Special FREE offer!

To start you building up your health right away, we make this absolutely FREE offer. Purchase a package of Ironized Yeast tablets at once, cut out the seal on the box and mail it to us with a clipping of this paragraph. We



"They don't get your wind"

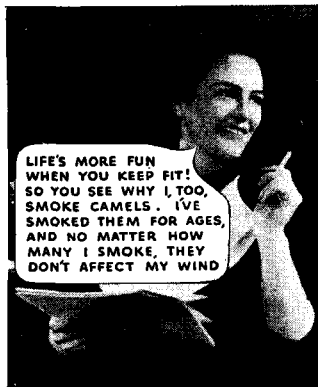
ATHLETES SAY

YOU'LL LIKE THEIR
MILDNESS TOO!



CAMELS DO NOT FRAZZLE MY NERVES OR UPSET MY CONDITION. AND THAT CAMEL TASTE IS JUST WHAT I WANT ... MILDNESS COUPLED WITH FULL, RICH FLAVOR!

ACCOUNTANT—C. A. Petersen



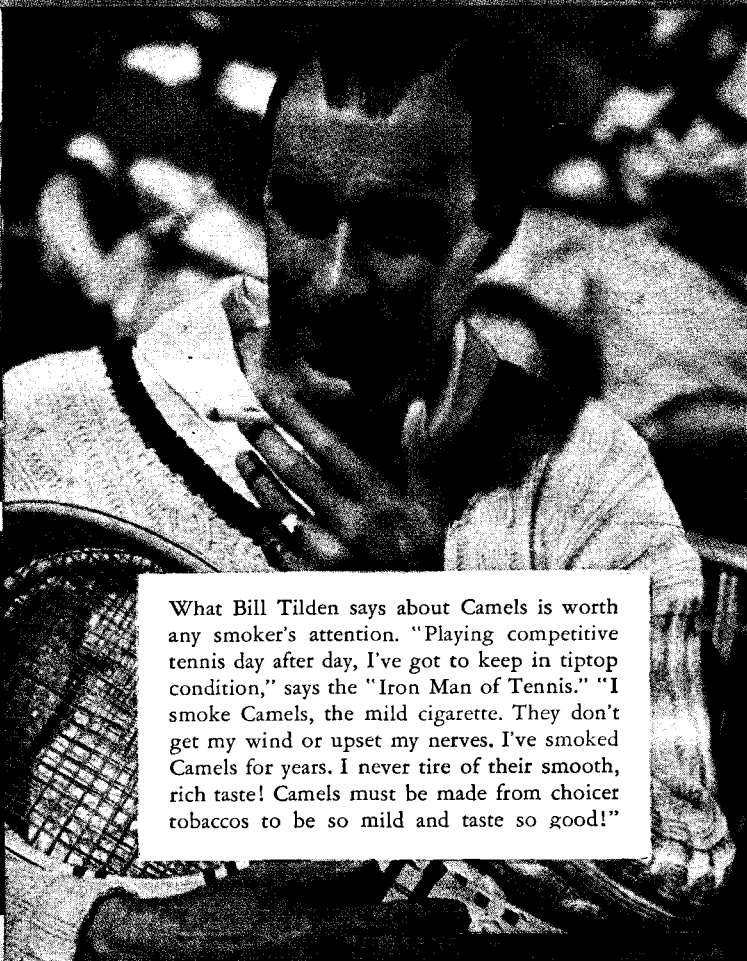
LIFE'S MORE FUN WHEN YOU KEEP FIT! SO YOU SEE WHY I, TOO, SMOKE CAMELS. I'VE SMOKED THEM FOR AGES, AND NO MATTER HOW MANY I SMOKE, THEY DON'T AFFECT MY WIND

WRITER—Eileen Tighe



I FOLLOW TILDEN, SARAZEN, GENRIG, AND THE OTHER SPORTS STARS IN SMOKING CAMELS. I SMOKE CAMELS STEADILY. THEY NEVER GET MY WIND

REPORTER—Dick Hungerford



What Bill Tilden says about Camels is worth any smoker's attention. "Playing competitive tennis day after day, I've got to keep in tiptop condition," says the "Iron Man of Tennis." "I smoke Camels, the mild cigarette. They don't get my wind or upset my nerves. I've smoked Camels for years. I never tire of their smooth, rich taste! Camels must be made from choicer tobaccos to be so mild and taste so good!"



*Costless
T. 1000s!*

● Camels are made from finer,
MORE EXPENSIVE TOBACCOS
—Turkish and Domestic—
than any other popular brand.

(Signed) R. J. Reynolds Tobacco Company
Winston-Salem, N. C.

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